

Value-Belief-Norm Theory and Pro-Environmental Behavior: A Study on Blue Collar Workers in Jakarta

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Abstract. Pollution and climate change have become urgent global challenges, with the Special Capital Region of Jakarta identified as one of the most affected areas. While many citizens have adapted to these environmental pressures, blue-collar workers remain relatively overlooked in studies of ecological awareness and pro-environmental behavior. This research addresses this gap by examining how value orientations influence ecological worldviews and subsequent behavioral outcomes. The objective of the study is to analyze the relationships within the Value-Belief-Norms (VBN) framework, specifically investigating how biospheric, altruistic, and egoistic values influence the New Ecological Worldview (NEP), awareness of consequences, ascription of responsibility, personal norms, consumer willingness, and ultimately environmental citizenship behavior. Using a quantitative approach, data were collected through convenience sampling from 69 blue-collar workers in Jakarta. The analysis employed Partial Least Squares–Structural Equation Modeling (PLS-SEM) with SmartPLS 4.0. Results demonstrate that NEP positively influences awareness of consequences, which in turn affects ascription of responsibility, leading to stronger personal norms. Personal norms significantly shape consumer willingness, which further enhances environmental citizenship. The findings highlight the importance of strengthening ecological values and personal responsibility among blue-collar workers as a pathway to foster sustainable behavior and active citizenship in urban environments.

Keywords: environmental behavior; blue collar workers; Jakarta

INTRODUCTION

Jakarta is grappling with a significant waste and disposal issue, generating a staggering 20.9 million tons of waste annually (Zuhra & Angkasari, 2023). This surge in waste stems from the city's dense population, burgeoning businesses, and the proliferation of new companies and MSMEs, all of which contribute to the growing waste stream. For Indonesia's middle-upper-class citizens, the impact of this waste and pollution is less severe. They generally possess the knowledge and resources to maintain environmental cleanliness and mitigate the harmful effects. However, the situation is dire for the city's blue-collar workers.

Blue-collar roles are characterized by hands-on labor, simpler skill sets, and lower educational and complexity demands than non-manual positions (Saari et al., 2021). According to the Central Bureau of Statistics (*Badan Pusat Statistik*-BPS), blue-collar workers in Indonesia tend to have a minimum wage or *UMR* (*Upah Minimum Rakyat*), which sets their income rate at around Rp 2,707,138 per month in 2024, while the minimum wage in Jakarta is around Rp 5,067,381. Most blue-collar workers struggle to survive in Jakarta, since the cost of living is quite high. Central Bureau of Statistics survey data indicate that Jakarta residents require at least Rp 5,135,818 to cover decent living needs, surpassing Jakarta's minimum wage of Rp 5,067,381. These communities often overlook environmental concerns, especially regarding Jakarta's trash and waste, putting their health at significant risk due to their limited financial capacity to access adequate healthcare.

Recognizing that environmental issues arise, in part, due to the presence of irresponsible companies contributing to environmental problems, the government requires companies to implement Corporate Social Responsibility (CSR) through Law No. 40 of 2007. CSR is

expected to be a form of corporate contribution to sustainable development and improving the quality of the environment and society. However, CSR implementation in Indonesia is often suboptimal (Liobikienė & Poškus, 2019), particularly in reaching vulnerable communities. Although some companies—both state-owned and private—are active in CSR activities, the focus of programs often emphasizes health aspects more than economic aspects, while the public expects a direct economic impact (Irawan et al., 2022).

The lack of outreach and appropriate approaches means that many people, especially blue-collar workers, do not understand the benefits of corporate CSR (Naatu, 2023). Furthermore, low environmental awareness is exacerbated by a lack of education, economic pressures, and limited access to information and public services. Previous studies have shown that overpopulation, slums, and indiscriminate waste disposal often occur because people are more focused on survival than on protecting the environment (Syaharuddin et al., 2022). Abidin et al. (2022) even emphasizes the importance of humans' role in maintaining the balance of nature through clean and environmentally friendly lifestyles.

Given this situation, it is crucial to understand how the values, beliefs, and social norms held by the community—particularly blue-collar workers—influence their environmental awareness and behavior. Therefore, this study uses the Value-Belief-Norm (VBN) Theory approach to explore the biospheric, altruistic, and personal norms that drive pro-environmental behavior in the context of low-income groups. This theory is considered appropriate because it explains how core values shape beliefs and ultimately give rise to social norms that underlie individual actions on environmental issues.

Previous studies have highlighted that waste management issues in urban areas are often linked to overpopulation, inadequate infrastructure, and the prevalence of slums, where indiscriminate waste disposal is common. For example, Sembiring and Nitivattananon (2010) analyzed community-based waste management in Indonesia and concluded that low public participation was due to a lack of awareness and economic pressures that prioritized survival over environmental care. Similarly, Abidin (2017) emphasized the central role of human behavior in maintaining environmental balance, noting that clean and environmentally friendly lifestyles are key to sustainability, yet often neglected in low-income communities.

Through this approach, this study aims to identify patterns of values and beliefs among blue-collar workers regarding environmental issues and design relevant interventions to increase their awareness and participation in maintaining environmental sustainability. It is hoped that the results of this study will not only contribute to the academic literature but also assist companies and policymakers in designing more inclusive and targeted CSR programs, supporting efforts towards cleaner and more sustainable cities.

RESEARCH METHODS

The type of research conducted uses quantitative research methods. Quantitative data is expressed in numerical form and processed and analyzed through statistical and mathematical calculations (Bougie & Sekaran, 2020). The data collection timing used by the researcher is cross-sectional, where data is collected within a specific period to help researchers find solutions and answers to existing problems (Bougie & Sekaran, 2020).

The population utilized by the researcher consists of blue-collar workers residing in *DKI Jakarta*. Using a PLS-SEM approach that allows the use of very small samples, the researcher

assumed a power level of 80%, significance level of 5%, and minimum path coefficient of 0.3. From these assumptions, the minimum sample size is given by 69 (Hair et al., 2022). In total, about 69 people filled the survey form. The researcher used data collection methods in the form of a questionnaire or survey. A questionnaire is a way to collect data and information by asking questions or statements to respondents involved in the research (Sugiyono, 2020). This study used a survey method with a 5-point Likert scale-based questionnaire (1 = Strongly Disagree, 5 = Strongly Agree).

The questionnaire in this study uses multi-item measurements including Biospheric Value, Altruistic Value, Egocentric Value, New Ecological Worldview, Awareness of Consequences, Ascription of Responsibility, Personal Norms, Consumer Willingness, and Environmental Citizenship. For Biospheric Value, this study uses Han (2021), Stern (2000), and Stern et al. (1999) scales consisting of 4 items. Altruistic Value uses Stern (2000) and Stern et al. (1999) scales consisting of 3 items. Egoistic Value uses De Groot and Steg (2007), Schwartz (1992), and Stern et al. (1999) scales consisting of 5 items. New Ecological Worldview uses Dunlap et al. (2000), Han (2021), and Stern et al. (1999) scales consisting of 3 items. Awareness of Consequences borrows 6 items from Han (2021), Stern et al. (1999), and Choi et al. (2015). The Ascription of Responsibility scale consists of 5 items using Ibtissem (2010), Choi et al. (2015), and Onwezen et al. (2013). The Personal Norms scale consists of 3 items using Han (2021) and Stern et al. (1999). Consumer Willingness uses Zhuang et al. (2021) and Li et al. (2019) scales consisting of 3 items, and Environmental Citizenship uses Naatu (2023) scales consisting of 4 items. Table 1 presents the demographic characteristics of the respondents for data collection.

The technique used in this research employs a causal or influence model and is utilized to test the proposed hypotheses. The analysis technique used is SEM (Structural Equation Model), with the purpose of aiding researchers with predictive goals using statistical data processing software, namely *SmartPLS* 4. This study employs hypothesis testing with Standardized Path Coefficients and significance levels to evaluate the hypotheses (Hair et al., 2022). If the p-value is smaller than the significance level of 0.05, then the hypothesis is accepted. Standardized Path Coefficients also reflect the level of influence of each factor. Before conducting hypothesis testing, data quality assessment is necessary using four indicators consisting of convergent validity, discriminant validity, and reliability. Reliability can be assessed through Cronbach's alpha coefficient.

RESULTS AND DISCUSSION

Validity and Reliability of The Construct Scale

Before conducting hypothesis testing, it is necessary to measure the model. To do this, Convergent and Discriminant Validity tests are required, which can be observed from the Average Variance Extracted (AVE) score, which should be greater than 0.5, and the Factor Loading score, which should be greater than 0.5 (Hair et al., 2022). In Table 2, it can be seen that all variables have AVE scores greater than 0.5. However, looking at the Factor Loading results, there is a reduction of 14 items, consisting of AV1, AV2, AV3, EV1, EV2, EV3, EV4, NEW1, NEW3, AR2, AR3, AR5, CW3 and EC2 as these items have loadings less than 0.5, thus not meeting the requirement.

Table 1. Validity and Reliability

	Item	Factor Loading	AVE	Cronbach's Alpha
Biospheric Value	B1	0.865	0.783	0.908
	B2	0.880		
	B3	0.930		
	B4	0.863		
Egoistic Value	EV5	1.000	-	-
New Ecological World View	NEW2	1.000	-	-
Awareness Consequences	AC1	0.793	0.684	0.906
	AC2	0.717		
	AC3	0.764		
	AC4	0.906		
	AC5	0.906		
	AC6	0.857		
Ascription of Responsibility	AR1	0.916	0.819	0.780
	AR4	0.894		
Personal Norms	PN1	0.727	0.654	0.735
	PN2	0.893		
	PN3	0.797		
Consumer Willingness	CW1	0.943	0.909	0.901
	CW2	0.964		
Environmental Citizenship	EC1	0.801	0.664	0.749
	EC3	0.837		
	EC4	0.806		

After passing all validity tests, the next step is to conduct Reliability tests, which can be observed from the Cronbach's alpha coefficient score being greater than 0.6. From the results in Table 1, it can be concluded that all latent variables have passed the reliability test.

Hypothesis testing result

To determine the significance between variables, bootstrapping with a minimum bootstrap sample of 5,000 is required (Hair et al., 2022). From the Bootstrapping results, T Values are obtained in Table 3 to test the significance between variables.

Table 2. Hypothesis Result

Hypothesis	Coefficient	T-Value	P-Value	Confirmation
BV → NE	H1 0.128	1.037	0.300	Unsupported
EV → NE	H3 0.170	1.048	0.295	Unsupported
NE → AC	H4 0.315	2.627	0.009	Supported
AC → AR	H5 0.780	13.483	0.000	Supported
AR → PN	H6 0.431	2.785	0.005	Supported

PN → CW	H7	0.335	2.551	0.011	Supported
PN → EC	H8	0.506	3.036	0.002	Supported
CW → EC	H9	0.213	1.358	0.175	Unsupported

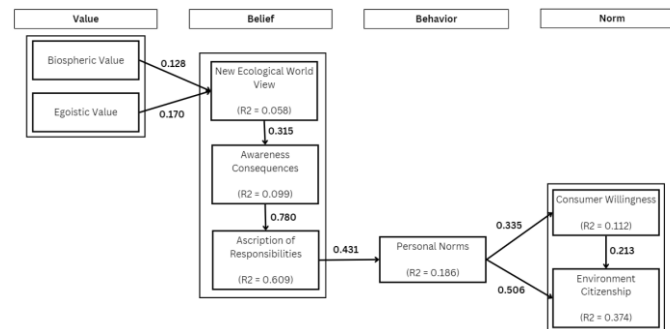


Figure 1. Research Model Result

Referring to Table 1, Hypothesis 2 (H2) did not meet the validity criteria and was therefore eliminated from Conceptual Map. Using a significance level of 5%, where the T Value must be greater than 1.96, the results in Table 3 indicate that Hypothesis 4 (H4) states New Ecological World (NE) View has a significant influence on Awareness Consequences (AC) (t-value = 2.627, p-value = 0.009). Hypothesis 5 (H5), AC has a significant influence on Ascription of Responsibility (AR) (t-value = 13.483, p-value = 0.000). Continuing with Hypothesis 6 (H6), AR has a significant influence on Personal Norm (PN) (t-value = 2.785, p-value = 0.005). Hypothesis 7 (H7) indicates that PN has a significant influence on Consumer Willingness (CW) (t-value = 2.551, p-value = 0.011). Hypothesis 8 (H8) state that PN has a significant influence on Environment Citizenship (EC) (t-value = 3.036, p-value = 0.002). However, looking at Table 3, Hypothesis 1 (H1), Hypothesis 3 (H3), and Hypothesis 9 (H9) has no significant influence as their values are less than the T value of 1.96 and greater than the P value of 0.05.

The Coefficients in Table 2 are useful to determine the extent of influence provided by each variable. NE explains AC by 31.5%, with 68.5% explained by other variables. Furthermore, AC has a 78% influence on AR, with 22% explained by other variables. AR has a 43.1% influence on PN, with the remaining 56.9% explained by other variables. PN has an influence to explain CW by 33.5%, with the remaining 66.5% explained by other variables. Lastly, PN can explain EC by 50.6%, with 49.4% explained by other variables.

NE has an R-square value of 0.058, indicating that BV and EV explain 5.8% of NE, leaving 94.2% unexplored. AC has an R-square value of 0.099, showing that NE accounts for 9.9% of AC with 90.1% unexplored. AR has an R-square value of 0.609 indicating that AC explain 60.9% of AR with 39.1% unexplored. PN has an R-Square value of 0.186 showing that AR explain 18.6% of PN with 81.4% unexplored. Continuing CW has an R-square value of 0.112 showing that PN explain 11.2% of CW with 88.8% unexplored. EC has an R-square of 0.371 accounts for 37.1% of PN with 62.9% of other factors not discusses.

Researcher examine the expectations and reactions of blue-collar workers regarding environmental sustainability based on pro-environmental behavior using the VBN theory. Based on the hypothesis testing results, not all hypotheses are supported. This confirms that

there are still some factors that do not affect blue-collar workers. This result is consistent with the findings of Naatu (2023), which revealed that personal values do not influence the new environmental worldview. Furthermore, contrary to the study by Naatu (2023), there is a significant relationship between belief, behavior and personal norms that impact the environment.

Overall, we agree with Naatu (2023) that pro-environmental behavior is motivated by complex reasons and various factors from both internal and external sources. Blue-collar workers may wonder whether it is their responsibility or the responsibility of others to engage in environmentally friendly behavior and whether it will benefit them directly. Although people may care about the environment, when it comes to actual behavior, it may not be a matter of personal benefit and responsibility. Therefore, when faced with situations where they realize the serious consequences, they will act accordingly.

CONCLUSION

This study highlights the complexities of fostering pro-environmental behavior among blue-collar workers in *DKI Jakarta*. While values and a sense of responsibility play a crucial role in shaping personal norms, these norms alone are not strong enough to drive meaningful behavioral change. The weak relationships between ecological worldview, awareness of consequences, and ascription of responsibility suggest that simply raising awareness may not be an effective strategy for encouraging sustainable actions. Instead, external influences such as workplace policies, social norms, and tangible incentives may be more impactful in motivating workers to engage in pro-environmental behaviors. The behavior of blue-collar individuals regarding the environment greatly impacts the environment around them. However, there are many factors that influence this behavior. More concrete approaches, such as responsibility-based training programs that focus on real-life applications, are needed. Since personal norms alone may not be sufficient to drive action, additional incentives such as reward systems or recognition programs for workers who actively participate in green initiatives should be implemented. Furthermore, stricter company policies on waste management and energy use in the workplace could serve as external motivators, encouraging workers to adopt more environmentally friendly practices. Future research should consider these contextual factors to develop a more comprehensive understanding of how blue-collar workers can be effectively encouraged to adopt environmentally responsible behaviors.

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