Article

Causal Model Analysis of the Effects of Civil Servants' Perceived Formalism, Green Conscientiousness, and Moral Reflectiveness on Green Behavior

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Abstract: The green behavior of civil servants in the workplace is influenced by personal moral reflectiveness and green conscientiousness. Group discussions and initiatives within organizations can also influence individual green behavior. Civil servants with greener lifestyles are more likely to demonstrate green behaviors. This study specifically explores the impact of civil servants' ritualized performance appraisals and formalism perception on moral reflectiveness and green advocacy. In this study, a sample of 250 civil servants was obtained by means of convenience sampling. This article applies confirmatory factor analysis and structural equation modeling to test research hypotheses. The results of the study found that ritualized performance appraisals positively affect perceived formalism. Perceived formalism negatively affects moral reflectiveness and green advocacy. Green lifestyles and green advocacy positively affect green behavior. Moral reflectiveness mediates the relationship between green conscientiousness and green behavior. This study confirms the influence of moral reflectiveness, green conscientiousness, green lifestyles, and green advocacy on green behavior. This study also found that ritualized performance appraisals and perceived formalism have negative effects on green behavior.

Keywords: moral reflectiveness; green conscientiousness; green lifestyle; green advocacy; ritualized performance appraisal; perceived formalism; green behavior

1. Introduction

Green behavior is environmentally friendly or beneficial behavior, including behavior that promotes the protection of the environment [1]. In short, behaviors that reduce harm to the environment are green behaviors. Ones and Dilchert brought green behaviors into the office, arguing that an organization's green policy is related to the green behaviors of its employees [2]. Ones and Dilchert defined workers' green behaviors as those behaviors that attain the organization's sustainability goals [2]. Green behavior in the office not only contributes to the physical and mental well-being of an organization's members, but also reflects the organization's sustainability goals [3].

Deci and Ryan identified motivation as a continuum of self-determination [4]. At one end is the control of external punishment, and at the other end is the internal incentive of the self. When an organization's green policy is driven by punishments and incentives, this is an external control [5]. When moral reflectiveness influences the green behavior of civil servants, it serves as intrinsic motivation [6]. Civil servants comply with organizational norms to avoid inconsistency between personal and organizational values [7]. Civil servants who perceive green behavior as consistent with their moral values from personal introspection are more likely to agree with the organization's green policy. Some scholars have explored voluntary green behaviors while others have explored green behaviors required by organizations [8,9]. Green behaviors include avoiding waste and protecting

resources, such as reusing and recycling; green office behaviors also include saving water, energy, and materials, bringing your own eco-cup, and using double-sided printing [10].

An individual's participation in what is considered to be moral behavior is influenced by whether the individual's moral judgements are typically right or wrong [11]. Moral reflectiveness is the process by which an individual thinks about moral issues and is considered to be related to moral behavior [12]. Our reflection on environmental protection reflects our respect for human dignity [13]. The more one consciously reflects on environmental protection, the more likely one is to implement green behaviors [14].

The origin of conscientiousness is one's "conscience," which is a standard of moral judgment [15]. Being conscientious is defined as following or being governed by one's conscience [16]. Conscientiousness has also been found to be an antecedent of an individual's morality [17]. Conscientiousness is part of an individual's personality traits. Research in corporate society has found that individual personality traits affect prosocial behavior [18].

The process of moral reflectiveness requires individuals to control their behavior through their conscience. Civil servants with green conscientiousness are more committed to the expectations of the organization [19]. Past research has also confirmed that employees possessing conscientiousness will engage in behaviors outside their roles [20,21]. Morality and conscientiousness have been suggested as antecedents of green behavior [15,22].

Cognitive consistency theory suggests that individuals have a tendency to be cognitively consistent [23]. Cognitive dissonance occurs when an individual has cognitive disorders [24,25]. Individual cognition is influenced by many different sources of information [26]. The average person tries to maintain cognitive consistency and avoid potential cognitive disorders [27]. When civil servants have higher moral reflectiveness and green conscientiousness, they are more likely to perform green behaviors.

The cognitive consistency theory explains not only the psychological state with respect to individual behavior, but also how individuals make decisions under the influence of different signals [26]. Organizational members receive a lot of informal information that affects their cognition. Green advocacy by organizational members is believed to enhance green behavior and organizational sustainability performance [15]. Foster et al. and Fraj and Martinez suggest that a green lifestyle positively influences green behavior [28,29]. When green behaviors are already practiced in the home life of the organization's members, they are more likely to be carried over to the office.

Overall, this study aims to explore whether ritualized performance appraisals strengthen the perceived formalism of civil servants. Does the ritualization of civil servants' performance evaluation strengthen their perceived formalism? Job performance measurement is an indicator of whether a civil servant has fulfilled the standards of their job. Ritualized job performance evaluations will make civil servants feel that regulations and actual implementation do not need to be consistent. Does the perceived formalism of civil servants reduce their moral reflectiveness and green advocacy? If civil servants feel that laws and regulations are inconsistent with actual implementation, they will not consider environmental protection issues seriously. In the end, civil servants are unwilling to take moral reflectiveness and green advocacy seriously. This study also explores whether green lifestyles and green advocacy can improve the green behavior of civil servants. Finally, it will explore whether moral reflectiveness mediates the relationship between green conscientiousness and green behavior.

Formalism, as proposed by Riggs, implies that there is a gap between statutory regulation and administrative implementation. The characteristics of formalism include ritualistic methods, lack of authority, and centralization of power [30]. Riggs found differences in rational decision-making between developed and developing countries [30]. A developing country is defined as a country with low industrial and human development. Taiwan was considered a developing country before 1998, and was included as an emerging developed country after 1998 [31]. However, the formalism of government agencies has not disappeared because of economic development. The economic development of a country is not the same as the continuation of the organizational culture of government agencies. Taiwan's

ritualistic performance appraisals still exist today. The ritualistic performance appraisals also reinforce the culture of formalism. Countries with high formalism lack consistency in government and social values. [30]. Civil servants with a high level of formalism have a harder time forming green initiatives, and they are unable to collectively share the value of environmental protection.

Thompson believes that the characteristics of Western administration are: authoritarianism, communication, problem-solving orientation, high moral requirements, etc. [32,33]. The reason for the reluctance of civil servants in developing countries to be held accountable is due to a lack of dedication, and Milne even believes that civil servants in developing countries lack clear goals and are unwilling to sacrifice for the public interest. [34]. Civil servants in developing countries put their own interests above those of society. Highly formalistic civil servants are not willing to engage in prosocial behaviors such as green behavior. Civil servants who are more formalistic are less likely to engage in moral reflectiveness. In addition, civil servants in developing countries have a lower level of green conscientiousness. Green conscientiousness and moral reflectiveness are both feelings of moral spontaneity.

This study mainly explores whether civil servants' moral thinking affects their green behavior in the office. Second, it explores whether knowledge and discussions about sustainability in civil service offices also influence their green behavior. Will civil servants who have implemented green behaviors in their daily lives transfer these green behaviors to the office? Finally, this paper examines whether ritualized performance appraisals and perceived formalism in government organizations negatively affect green behavior in offices.

2. Literature Review and Hypotheses Development

2.1. Theoretical Basis

Self-determination theory argues that individual behavior is influenced by intrinsic and extrinsic motivations [4]. The green behavior of government offices may be affected by an individual's intrinsic and extrinsic incentives. Green conscientiousness and moral reflectiveness factors are the intrinsic motivation of the individual. Social cognitive theory is applied to personal responses to morality issues [12]. Moral competencies are considered antecedent factors affecting individual green behavior. Green moral competencies include whether individuals know about moral codes and reflect on ethical behavior [12]. Social cognitive theory provides information on how individuals can transform from cognitive ability to green behavior. That is how green conscientiousness affects green behavior through moral reflectiveness.

Cognitive consistency theory was also adopted in this study. Personal cognitive consistency comes from Festinger's cognitive dissonance theory [24]. Cognitive dissonance theory claims that individuals will pursue psychological consistency and reduce their cognitive dissonance. [24]. Civil servants will also maintain the cognitive consistency between moral reflectiveness, green conscientiousness, and green behavior.

The formalism theory applied in this study was rarely explored empirically in the past. Ritualistic administration in formalism makes legal regulations inconsistent with actual implementation [30]. Civil servants feel that environmental sustainability will not be implemented seriously, so they will be less likely to reflect on morality, and will not exchange green knowledge and skills with colleagues in the office. The formalistic culture of an administrative organization cannot disappear immediately after a country's economic development. In the past, many scholars theoretically and qualitatively explored the reasons for the formation of administrative formalism. Thompson found that there were more generalists in developing countries which placed greater emphasis on hierarchy and process [32]. Civil servants in developing countries tend to confuse policy instruments with policy goals [32]. In many developing countries, the generalist supersedes the specialist [31]. Generalists have little regard for the knowledge and skills concerning environmental protection. Civil servants with high formalism will pay too much attention to regulations

and paperwork, and be afraid of innovation. Civil servants are waiting for orders from above, and lack a sense of security at work [35]. The desire to innovate or change existing systems is obstructed by senior executives [34]. As a result, civil servants tend to become quiet, loyal, and devoid of differing opinions. Green behaviors would change the operation of the administration, and will naturally be opposed.

2.2. Hypotheses Development

2.2.1. The Relationship between Green Conscientiousness, Moral Reflectiveness, and Green Behavior

Green behavior among members of an organization reflects their long-term commitment to environmental sustainability [2]. Green behavior in the workplace reflects the meaning of environmental sustainability in an organization, including saving electricity, conserving paper, limiting the temperature settings of air conditioners, and promoting the use of eco-cups among employees [15]. Conscientious civil servants will reflect on the meaning of environmental sustainability in their own organizations and engage in green behavior in the workplace [15]. Environmental psychologists understand that environmental attitudes and behavior change by first understanding the personality of individuals [36]. Conscientiousness is part of the personality traits that make individuals systemic, self-regulating, and responsible in following norms [37]. Green conscientiousness is thought to be associated with environmental protection and commitment [38]. Responsible and conscientious personalities make individuals willing to comply with environmentally friendly norms in society and in the workplace [39]. Moral reflectiveness is seen as a proximate cause of green behavior, which leads individuals to be concerned with environmental issues [40].

The study of green behavior cannot ignore the moral values of individuals [6]. Green behavior involves the correct and incorrect judgments of individuals regarding the value of environmental protection [14,15]. Moral reflectiveness is a moral concept that differs from that of being non-moral or amoral [41]. The meaning of moral reflectiveness is an individual's long-term reflection on morality and moral elements based on his or her own experience [12]. From the perspective of the social cognitive theory, individual behavior is primarily influenced by cognitive processes [12]. Moral reflectiveness is influenced by the individual's perception of morality [42]. When a civil servant's moral reflectiveness is high, they are more likely to perform behaviors that are beneficial to society. In other words, the higher the moral reflectiveness of civil servants, the more likely they are to engage in green office behavior.

Many ethical decisions of an individual are influenced by ethical perceptions [43]. Social cognitive theory states that an individual's behavior is influenced by the interaction of self and environmental factors [44,45]. The way that issues related to environmental protection policies within the office are perceived is influenced by the ethical judgment of each individual [42]. According to social cognitive theory, organizational members are more likely to reflect on ethical behavior in their own experiences in an environment with ethical structures [46]. Previous research has shown that moral reflectiveness has a positive effect on green behaviors, and Reynolds suggests that moral reflectiveness has an effect on an individual's decisions regarding environmental protection [12]. Evidently, moral reflectiveness also tends to increase green behavior in the office [42].

Previous studies have hypothesized that green conscientiousness and moral reflectiveness are related [15,47]. Some studies suggest that conscientiousness is a precursor to moral behavior in individuals [17], and that conscientious individuals tend to pursue their own moral values [48]. Previous research has found that individual conscientiousness and organizational citizenship behavior are positively correlated [49,50]. Conscientious organizational members are more willing to engage in extra-role behaviors [20,21].

Barrick, Stewart, and Piotrowski suggest that an individual's personality traits influence their behavior [19]. An individual's green conscientiousness is a more distant antecedent of green behavior, and moral reflectiveness is a more proximate antecedent of

green behavior. Both green conscientiousness and moral reflectiveness trigger the latter green behavior [40]. Green conscientiousness reinforces green behavior through moral reflectiveness, and Reynolds argues that moral reflectiveness is the reflection of an individual's moral guidance in everyday life [12,47]. Moral reflectiveness is a conscious, self-controlled process that serves as a constraint for green behavior [51].

H1. *Moral reflectiveness positively influences green behavior*

H2. *Green conscientiousness positively influences moral reflectiveness*

H3. *Moral reflectiveness mediates the relationship between green conscientiousness and green behavior*

2.2.2. The Relationship between Green Lifestyle and Green Behavior

Axsen et al. defined a green lifestyle as a lifestyle in which an individual is committed to protecting the environment [52]. Aydın and Ünal stated that an individual's lifestyle affects both their attitude and behavior towards the environment [53,54]. A green lifestyle is also a pro-social behavior, which indicates one's responsibility towards nature [55,56]. Individuals who live a green lifestyle are more likely to use environmentally friendly products and implement recycling, energy-saving, and conservation programs [57]. Sony and Ferguson point out that individuals who emphasize environmental protection in their daily activities are more likely to exhibit green behavior [58].

Kumar and Ghodeswar found that people who are environmentally conscious in their daily lives are more likely to adopt green behaviors [56,59]. Individuals who adopt a green lifestyle in their daily life are more aware of environmental protection [56]. Mohd Suki suggested that people who are green, environmentally friendly, and recycling-oriented in their daily lives are more likely to demonstrate green behavior [57]. Axsen et al. found that individuals who recycle and use trams on a regular basis are more likely to engage in green behavior in the office [52].

H4. *Green lifestyle positively influences green behavior*

2.2.3. The Relationship between Green Advocacy and Green Behavior

Group discussions within an organization can influence an individual's green behavior [2]. Influencing and persuading others to adopt certain behaviors is advocacy [60]. The discussion and sharing of knowledge and perspectives on environmental sustainability among workplace groups influence members' green behavior [15]. Green advocacy is considered to be an important factor influencing green behavior [61–63]. Green advocacy by members of an organization refers to the extent to which members of an organization are able to convince their employees to engage in green behavior by openly discussing environmental knowledge and skills [64]. Green advocacy by members of an organization will help to improve an organization's pro-environmental climate and further contribute to the sustainability of the organization [63,65].

Individuals within an organization can also be affected by green advocacy. Past research on organizational citizenship behavior has found that individuals advocating for organizational citizenship behavior have an effect on other members [66]. Through social interactions within organizations, mutual environmental sustainability values are developed [67]. The more environmental issues and knowledge are discussed within an organization, the greater the impact on the green behavior of its members. Therefore, it is hypothesized that green advocacy will reinforce green behavior [1].

H5. *Green advocacy positively influences green behavior*

2.2.4. The Relationship between Ritualized Performance Appraisals and Perceived Formalism

Formalism is characterized by ritualistic methods [30], which makes employee appraisal a formality. For decades, civil servants in Taiwan have been graded as Grade A and

Grade B on a rotating basis, with no assessment based on actual performance [68]. Civil servants who received a grade of A accounted for 75% of the total appraisals, while those who received a grade of B accounted for 25% [68]. Civil servants can score three A grades and one B grade in four years, and almost all civil servants are eligible for promotion [68]. Riggs also argues that there are no objective standards for the job performance of civil servants in developing countries. As a result, civil servants are reluctant to work productively because of the lack of performance standards [30]. Consequently, government agencies are fraught with formalism. The cognitive consistency theory explains that individuals have a tendency to be cognitively consistent [23]. When civil servants perceive personnel appraisal as a formality, they are more likely to feel the ritualistic nature of administrative procedures, and the formalistic approach to personnel appraisal causes civil servants to be more accustomed to formalism.

H6. *Ritualized performance appraisals positively influence perceived formalism*

2.2.5. The Relationship between Perceived Formalism, Moral Reflectiveness, and Green Advocacy

Burns and Stalker argue that in organic model organizations, the responsibilities of professionals are not clearly listed and must be formed through constant interaction with colleagues [34]. In a mechanistic system, the supervisor decides whether the professional's work is consistent with the organization's goals. The green behavior discussed in this paper is considered moral spontaneity. Until supervisors develop the norms of green behavior, civil servants will not actively engage in green advocacy, and formalism can reduce the moral reflectiveness of civil servants when they are not concerned with the public interest.

The previously mentioned cognitive consistency theory advocates that individuals have a tendency to be cognitively consistent [23]. When cognitive dissonance occurs in an individual, cognitive disorders arise [24,25]. The general population tries to maintain cognitive consistency in order to avoid potential cognitive disorders [27,63]. When civil servants perceive that regulations and practices are not the same, they will not discuss environmental protection issues seriously. Even if the organization requires green behavior, they will not think it will be seriously assessed and enforced. The need for cognitive consistency among civil servants makes them less likely to actually engage in green advocacy. When civil servants believe that environmental protection will not be taken seriously, they will not engage in moral reflectiveness, and the negative relationship between formalism and green advocacy and moral reflectiveness is less likely to cause cognitive dissonance.

Civil servants in developing countries see themselves as different from the general public. Civil servants are primarily concerned with their own interests and not the public interest [34]. As a result, they do not place much emphasis on environmental issues in their organizations, resulting in a lack of enthusiasm for green advocacy and a failure to exchange and communicate skills and knowledge regarding environmental protection. Formalist civil servants are less empathetic to the public [34]. A lack of compassion causes civil servants to have a lower level of moral reflectiveness. Conscientiousness and formalism are different in that conscientiousness enhances moral reflectiveness; formalism, on the other hand, reduces civil servants' moral reflectiveness.

H7. *Perceived formalism negatively influences moral reflectiveness*

H8. *Perceived formalism negatively influences green advocacy*

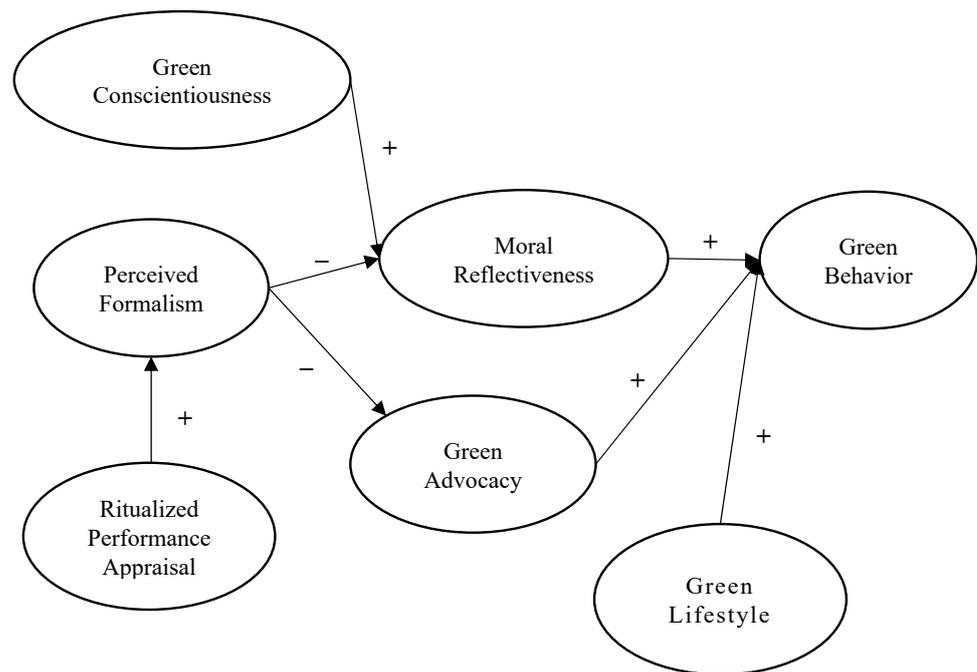All hypothesized relationships are drawn in Figure 1.

Figure 1. Conceptual framework.

3. Materials and Methods

3.1. Sample, Tools, and Procedure

In 2020, Taiwan's government agencies consumed 2% of the country's total electricity consumption [69]. Government agencies encourage enterprises to save energy and reduce carbon emissions, and have also formulated plans to require all government agencies to reduce electricity consumption every year [69]. The green behavior of civil servants in government agencies is worth exploring. In this study, 250 valid samples were obtained in three regions by means of convenience sampling. The researchers contacted the selected institutions by phone and email, and sent blank questionnaires after they expressed their willingness to fill in the questionnaires. Finally, a total of 9 government agencies in northern, central and southern Taiwan agreed to distribute questionnaires. Each agency distributed 50 questionnaires, and nine agencies distributed a total of 450 questionnaires between September and November 2022.

At the beginning of the questionnaire, the respondents were told to answer anonymously and remove personal information, and that the research data would be stored in the laboratory of the project host, and deleted in December 2023. Respondents were also informed that they were free to decide whether or not to join the study and fill out the questionnaire, and that they could drop out at any time without feeling pressured. Finally, the respondents were given the phone number and e-mail address of the program host.

This study used G*Power version 3.1.9.7 to calculate the required sample size. We set α err prob = 0.05, Power (1-β err prob) = 0.95, and calculated total sample size = 146. The sample size of 250 in this study exceeds the 146 samples calculated by G*Power. Regarding the basic information of the sample, 33.2% of the respondents were male and 66.8% were female (see Table 1). In terms of age, 16.4% were aged 20–29; 26.0% were aged 30–39; 35.2% were aged 40–49; and 22.4% were aged 50 or above. As for education level, 27.2% of respondents had received a specialized degree, while 72.8% had at least an undergraduate degree. With respect to years of experience, 41.2% of the respondents had 10 years or less of public service, while 58.8% had above 11 years of service. As for the marital status of the respondents, 38.8% were married and 61.2% were unmarried. This study is based on the 2021 Taiwan statistical yearbook of civil service report for sample representativeness testing. The chi-square test was performed on the population and samples after weighting

gender, age, and education level, and the calculated chi-square values were 0.00, 0.09, and 0.16, respectively. A non-significant chi-square test indicates no difference in sample and population distribution.

Table 1. Sample basic information.

Gender	Percentage (%)	Seniority	Percentage (%)
Male	33.2 %	1 to 5 years	22.8 %
Female	66.8 %	6 to 10 years	18.4 %
Age		11 to 15 years	19.2 %
20 to 29 years old	16.4 %	16 to 20 years	17.6 %
30–39 years old	26.0 %	21 years or more	22.0 %
40–49 years old	35.2 %	**Marriage**	
50–59 years old or older	22.4 %	Unmarried	38.8 %
Education Level		Married	61.2 %
Junior college	27.2 %		
College	55.6 %		
Postgraduate	17.2 %		

3.2. Measures

The items used for the evaluation of green behavior were modified from the scale used by Robertson and Barling [70]. Those items for the measurement of a green lifestyle were modified from the Florenthal and Arling measurement questions [71]. Items regarding moral reflectiveness were modified from the items used in Reynolds [12]. Items for the purpose of examining green conscientiousness were modified from the items used in Donnellan et al. [72]. Those items which focused on green advocacy were modified from the items used by Kim et al. [15]. As for items relating to formalism, they were designed with reference to the definitions of Liu and Riggs [30,73,74]. With respect to the aforementioned definitions, the following items were designed: "I think the environmental protection standards of public agencies may not be implemented". "I feel that the environmental protection behavior of many civil servants is only superficial". "I don't think it's true that civil servants act in the interest of environmental protection", and "I don't think civil servants take enforcing environmental protection seriously". According to Riggs' formalist definition [30], the following items regarding ritualized performance appraisal were designed: I am in favor of civil servants taking turns in the performance appraisal of A and B. I am in favor of all civil servants being promoted within three years. I think civil service careers should be guaranteed forever.

3.3. Validity and Reliability Analysis

This study uses the confirmatory factor analysis (CFA) of SEM software to test the reliability and validity of the questionnaire. Firstly, the model absolute fit measures were observed to confirm the model fit and overall construct validity.

In terms of model absolute fit measures, the conceptual model GFI of this study was 0.99, which was greater than 0.90, indicating that the hypothetical model was acceptable. SMSR was 0.052; RMSEA was 0.052, both of which are slightly higher than the judgement criterion of 0.05, yet are still within an acceptable range. From the model comparison fit measures, the NNFI is 0.99, the NFI is 0.98, the CFI is 0.99, the IFI is 0.99, and the RFI is 0.98, all of which are higher than the judgment criterion of 0.90, indicating that the hypothetical model is acceptable. In terms of the model parsimonious fit measures, the PNFI was 0.85 and the PGFI was 0.76, both higher than the conventional standard of 0.50. All these indicate the appropriateness of the conceptual model and confirm the overall construct validity of this study.

Secondly, the negative factor λ values ranged from 0.64 to 0.96 for all items (see Table 2), meaning all were above 0.5. This is in line with the recommendation of Hair, Anderson,

Tatham, and Black (>0.5), indicating that the items of this study have an acceptable level of reliability [75]. The first step of the validated factor analysis was to verify the loading of the questions. The *t*-values of the loading values of all the questions in this study reached statistically significant levels, which partially confirmed both the construct validity and convergent validity of the latent variables in this study.

Table 2. Item loading and reliability.

Variables	Items	λ	Z Value	CR	α
Ritualized Performance Appraisal	I am in favor of civil servants taking turns in the performance appraisal of A and B.	0.81		0.85	0.84
	I am in favor of all civil servants being promoted within three years.	0.88	29.5		
	I think civil service careers should be guaranteed forever.	0.69	28.7		
Green Conscientiousness	I do a good job in environmental protection affairs.	0.81		0.90	0.90
	I will not forget to pay attention to environmental protection matters in my work.	0.83	25.2		
	I like that environmental protection work is continued.	0.89	25.1		
	My environmental protection work in the office is carried out sequentially.	0.85	23.9		
Green Lifestyle	I recycle at home or work.	0.65		0.79	0.78
	I buy products that reduce environmental pollution.	0.73	25.4		
	I buy recyclable products.	0.70	21.3		
	I will change previous purchases for ecological reasons.	0.71	24.6		
Green Behavior	I try to print double-sided as much as possible in the office.	0.64		0.79	0.76
	I turn off the lights when I leave the office.	0.77	22.2		
	I bring eco-friendly tools to the office, such as eco-friendly mugs.	0.78	23.0		
Moral Reflectiveness	I often consider whether my decisions are ethical.	0.87		0.94	0.93
	I think about the morality of my actions almost every day.	0.90	28.7		
	I like to think about moral issues.	0.87	28.3		
	I often reflect on the morality of my decisions.	0.75	24.4		
	I value my own moral standards.	0.91	28.8		
Perceived Formalism	I think the environmental protection standards of public agencies may not be implemented.	0.92		0.96	0.96
	I feel that the environmental protection behavior of many civil servants is only superficial.	0.96	40.2		
	I don't think it's true that civil servants act in the interest of environmental protection	0.95	40.1		
	I don't think civil servants take enforcing environmental protection seriously.	0.90	39.8		
Green Advocacy	I discuss with my colleagues how to recycle or reuse office waste.	0.71		0.89	0.89
	I work with my colleagues to create an environmentally friendly office.	0.82	24.1		
	I share the knowledge and methods of avoiding environmental pollution with my colleagues.	0.87	26.1		
	I share with my colleagues knowledge and methods on how to save electricity in the office.	0.81	26.8		
	I share with my colleagues how to reduce paper usage in the office.	0.79	24.7		

Note: RPA = ritualized performance appraisal; GC = green conscientiousness; GL = green lifestyle; GB = green behavior; MR = moral reflectiveness; PF = perceived formalism; GA = green advocacy. The first Item of each variable is fixed to 1, so there is no Z value.

The composite reliability (CR) of latent variables is a measure of the internal consistency of variables. The higher the CR value of a latent variable, the better the items are able to measure said latent variable, and according to Hair et al., the CR value should be greater than 0.7 [75]. The CR values in this study ranged from 0.79 to 0.96, all of which were greater than 0.7, indicating that the latent variable in this study had good internal consistency.

The average variance extraction (AVE) represents the percentage of the latent variable that can be measured by the items in a questionnaire, which is not only used to determine the reliability, but also to represent the discriminant and convergent validity. According to Fornell and Larcker, an AVE value greater than 0.5 indicates that the construct has convergent validity [76]. The AVE values of the potential variables in this study ranged from 0.51 to 0.87, all of which were greater than 0.5, indicating that the latent variable in this study had good discriminant and convergent validity. The Cronbach alpha values for all variables ranged from 0.76 to 0.96 (Table 2), which is higher than the minimum standard of reliability set by Nunnally: 0.60 [77].

3.4. Inter-Correlations

The square root of the average variance extracted (AVE) of a single variable must be greater than the correlation coefficient between two variables, which confirms the discriminant validity of the studied variable [78]. Table 3 provides the matrix of correlation coefficients between variables, and the diagonal line represents the square root of the AVE of the variables. The square root of the AVE in this study is between 0.71–0.93, which is larger than the correlation coefficient between any two variables, indicating that the measurement model has good discriminant validity. The AVE of this study is greater than MSV and ASV, which also confirms the discriminant validity of variables [75].

Table 3. Square root of AVE and inter-correlations.

	1	2	3	4	5	6	7	ASV	MSV	AVE
Ritualized Performance Appraisal (1)	(0.81)							0.06	0.16	0.65
Green Conscientiousness (2)	−0.20	(0.84)						0.21	0.35	0.70
Green Lifestyle (3)	−0.24	0.57	(0.71)					0.23	0.37	0.51
Green Behavior (4)	−0.19	0.59	0.61	(0.75)				0.22	0.37	0.57
Moral Reflectiveness (5)	−0.14	0.54	0.58	0.58	(0.87)			0.21	0.33	0.76
Perceived Formalism (6)	0.41	−0.24	−0.19	−0.18	−0.24	(0.93)		0.07	0.16	0.87
Green Advocacy (7)	−0.11	0.65	0.61	0.63	0.62	−0.25	(0.79)	0.28	0.42	0.63

Note: The figures in parentheses indicate the square root of AVE of the study constructs. MSV = maximum share variance, ASV = average share variance.

The following correlation matrix shows that the preliminary relationship between green behavior and green lifestyle, moral reflectiveness, and green advocacy are positively correlated, with coefficients of 0.57, 0.54, and 0.65, respectively. The correlation coefficient between moral reflectiveness and green conscientiousness was 0.54. Perceived formalism was negatively correlated with green advocacy and green conscientiousness, with coefficients of −0.25 and −0.24. The correlation coefficient between ritualized performance appraisal and perceived formalism was 0.41. All the constructs of this study are in line with expectations.

3.5. Control for Common Method Variance

Common method variance (CMV) is believed to be a type of variation arising as a result of the measurement method, which leads to an internal consistency error that must be controlled [79,80].

With regard to the prevention of common method variance, the self-administered questionnaire adopted in this study is more likely to cause common method variance (CMV) problems. The questionnaire in this study is filled in anonymously and mixed with 5- and

7-point Likert scales, which are considered to reduce CMV problems [79]. In addition, the questionnaire was designed to be simple and easy to understand, and questions that were confusing to the respondents, could be interpreted differently, or were difficult to answer were avoided as much as possible.

For the post hoc analysis, this study adopted Harman's one-factor test to examine the questions. The explanation of the first principal component of the exploratory factor analysis without rotation was only 39.4%, which was considered to be relatively low and confirmed that issues related to common method variation were not significant in this study.

4. Results

We used path coefficient analysis of structural equation modeling (SEM) to test research hypotheses [81]. Table 4 shows that moral reflectiveness positively affects green behavior with a path coefficient of 0.13, which validates hypothesis 1. That is, the higher the moral reflectiveness of civil servants, the more likely they are to adopt green behavior. The moral reflectiveness of the environment is the long-term moral thinking and judgment of civil servants [12]. From the perspective of social cognitive theory, the higher the moral reflectiveness of civil servants, the more they will practice green office behavior. [12,42]. According to the path coefficient, an increase of 1 unit in civil servants' moral reflectiveness will lead to an increase of 0.13 units in green behavior.

Table 4. Path Coefficients.

	Causal Path			Path Coefficient	Standard Error	Z Value	*p* Value
H1	Moral Reflectiveness	->	Green Behavior	0.13	0.03	2.94	< 0.001
H2	Green Conscientiousness	->	Moral Reflectiveness	0.64	0.03	20.87	<0.001
H4	Green Lifestyle	->	Green Behavior	0.67	0.05	11.82	<0.001
H5	Green Advocacy	->	Green Behavior	0.52	0.03	14.04	<0.001
H6	Ritualized Performance Appraisal	->	Perceived Formalism	0.53	0.02	26.78	<0.001
H7	Perceived Formalism	->	Moral Reflectiveness	−0.18	0.01	−12.99	<0.001
H8	Perceived Formalism	->	Green Advocacy	−0.35	0.01	−19.29	<0.001

Green conscientiousness positively affects green behavior, with a path coefficient of 0.64, which verifies hypothesis 2. Civil servants with high green conscientiousness are more likely to engage in moral reflectiveness. Past research has demonstrated that an individual's green conscientiousness and moral reflectiveness are related [15,47]. Some scholars have also pointed out that green conscientiousness is the distant cause of green behavior, and moral reflectiveness is the proximate cause of green behavior [19,40]. The green conscientiousness of civil servants affects green behavior through moral reflectiveness. Table 5 presents the findings of the mediation analysis. The direct effect of green conscientiousness on green behavior was 0.65 and the indirect effect was 0.26, both of which reached statistically significant levels, validating hypothesis 3. The mediation percentage of the direct effect was 67.4. The mediation percentage of the indirect effect was 32.6.

Table 5. Mediation estimates.

Path Estimates	Label	Estimate	SE	Z Value	*p* Value	% Mediation
Green Conscientiousness → Moral Reflectiveness	a	0.79	0.08	10.05	<0.001	
Moral Reflectiveness → Green Behavior	b	0.22	0.03	6.45	<0.001	
Green Conscientiousness → Green Behavior	c	0.35	0.05	7.15	<0.001	
Mediation Estimates						
Indirect Effect	a × b	0.26	0.03	5.43	<0.001	32.6
Direct Effect	c	0.65	0.05	7.15	<0.001	67.4
Total Effect	c + a × b	0.91	0.05	11.64	<0.001	100

A green lifestyle positively affects green behavior, with a path coefficient of 0.67, which verifies hypothesis 4. Civil servants who are concerned about environmental protection in their daily lives will also bring green behavior to their office [56,57]. Civil servants pay attention to environmental sustainability in their daily lives and are willing to save energy and reduce carbon emissions in the office. From the perspective of the path coefficient, an increase of 1 unit in the green lifestyle of civil servants will lead to an increase of 0.67 units in green behavior.

Green advocacy positively influences green behavior, with a path coefficient of 0.52, which verifies hypothesis 5. Civil servants who are willing to discuss and exchange environmental protection knowledge and skills in the office are more likely to demonstrate green behavior [2,15,60]. The exchange of environmental protection knowledge and skills in the office can help to improve green behavior [2,15,60]. Green advocacy in the office gives civil servants access to methods of environmental protection enforcement. On the contrary, the lack of green advocacy in the office makes civil servants less motivated and less likely to carry out environmental protection activities.

The ritualized performance appraisal common among Taiwanese civil servants is more likely to create perceived formalism, with a path coefficient of 0.53, which verifies hypothesis 5. The level of perceived formalism of civil servants is higher when they are not rated according to their performance and alternately assigned grades A or B instead [68]. Even though Taiwan was assessed as an emerging developed country by the IMF in 1998 [31], the lack of objective standards for civil servant performance evaluation still exists. Most of the evaluation indicators in developed countries are economic and human development. Even if developing countries have reached the level of developed countries in terms of economy and human development, the culture of formalism will continue to exist. When there is no fixed standard for civil service performance, civil servants may begin to perceive the excessive levels of formalism in government agencies. Perceived formalism negatively affects moral reflectiveness with a path coefficient of −0.18, which verifies hypothesis 7. When civil servants believe that office environmental protection will not be seriously enforced, they will not seriously engage in moral reflection.

Perceived formalism negatively affects green advocacy, with a path coefficient of −0.35, which verifies hypothesis 8. Civil servants with high levels of perceived formalism do not think that green behavior in the office will really be implemented, and they have no need to discuss environmental knowledge and skills with their colleagues. Civil servants with high formalism will put self-interest above public interest [34]. Civil servants with high awareness of formalism will not participate in discussions on green knowledge and skills that are beneficial to the public. They do not expect the green policy to be seriously implemented, which is also one of the reasons for not participating in green advocacy.

5. Discussion

First, this study confirms that moral reflectiveness has a positive effect on green behavior, which is similar to the findings of Kim et al. and Feinberg and Willer [15,40]. These findings suggest that green behavior is a choice of ethical behavior in the office. Civil servants with higher levels of moral reflection are more willing to perform green behavior.

Conscientiousness and moral reflectiveness are both part of personality traits. Barrick, Stewart, and Piotrowski pointed out that personality traits affect green behavior, and noted that green conscientiousness is a more distant antecedent of green behavior, while moral reflectiveness is a more proximate antecedent of green behavior [19]. Feinberg and Willer also found a correlation between conscientiousness and moral reflectiveness [15]. This study has established that the degree of both green conscientiousness and moral reflectiveness among civil servants can impact green behavior. Green conscientiousness also impacts green behavior through moral reflectiveness.

The green lifestyle of civil servants is one of the causes of green behavior in the office. This is similar to the previous findings of Ninh and Sony and Ferguson [55,58]. Civil servants who recycle, save electricity, and save resources in their daily lives are more

likely to exhibit green behavior in the office, and the consistency of green behavior in their daily life and in the office is less likely to cause cognitive dissonance among civil servants. Civil servants who are willing to discuss environmental knowledge and skills in the office and convince others to engage in green behavior are also more willing to engage in green behavior themselves. This conclusion is similar to the findings of Marquis and Ren [65,82]. Interactions among civil servants within public organizations can help shape environmental sustainability values [67]. Green behavior is a form of organizational citizenship behavior, and it is easier to get more civil servants to engage in green behavior through green advocacy. Green behavior is a form of organizational citizenship behavior. The one-way relationship among moral reflectiveness, green conscientiousness, green lifestyle, green advocacy, and green behavior has been confirmed in past studies. Exploring the causal model relationship between independent variables, mediator variables, and green behavior is the contribution of this study. This study calculates the influence of ritualized performance appraisal and perceived formalism variables on green behavior, which is not explored by other studies.

The ritualization of performance appraisal in Taiwan makes civil servants perceive the formalistic nature of public administration, and Riggs also mentioned the lack of objective criteria for administrative performance in developing countries [30]. In Taiwan, the method of administrative performance appraisal has continued unchanged over the past few decades. Civil servants with high formalist perceptions believe that green policies are not valued and therefore do not feel the need to discuss knowledge and skills relating to sustainability. From the perspective of cognitive consistency theory, the formal performance of green behavior discourages civil servants from green advocacy and moral reflection. Milne suggests that civil servants in developing countries are not concerned with the public interest [34], making it difficult for them to engage in moral reflectiveness.

6. Similarities and Differences from Previous Literature Findings

This study uses the keywords green behavior and work office to search the academic network database in 2022–2023. We further analyze the similarities and differences between this paper and the latest green behavior research. The research of Cheng et al. found that green human resource management positively affects organizational self-esteem [63]. Green human resource management and organizational self-esteem also positively affect green advocacy [63]. Cheng et al.'s research used green human resource management and organizational self-esteem to positively predict green advocacy. This article uses the perceived formalism variable to negatively predict green advocacy. Perceived formalism is an important attribute of transition processes from developing countries, and its impact on green office behavior has been little explored. The negative impact of perceived formalism and ritualized performance appreciation on green advocacy is what makes this paper different from other studies.

Khan et al. found that the sharing of green knowledge moderates the relationship between green human resource management and green commitment [83]. They also confirmed that green commitment mediates the relationship between green knowledge sharing and green behavior. Ribeiro et al. confirmed that green human resource management positively affects organizational identity and environmentally friendly behavior [84]. Organizational identity mediates the relationship between green human resource management and environmentally friendly behavior. Many authors explore the impact of human resource management on green behavior. The impact of human resource management on green behavior is mostly considered to be positive. This study mainly selects the ritualized performance appraisal variable of personnel management, which has a negative impact on green behavior.

Omarova et al. confirmed that pro-environmental leadership positively affects employees' pro-environmental behavior [85]. Environmental awareness mediates the relationship between pro-environmental leadership and employees' pro-environmental behavior [85]. Peng et al. confirmed that the leader's environmental preference will affect the employee's

energy-specific pro-environmental behavior [86]. Green self-efficacy and organizational support mediate the relationship between leaders' environmental preferences and energy-specific pro-environmental behavior [86]. These two papers mainly discuss whether the green preference of leaders will affect the green behavior of employees. This paper mainly explores the impact of employees' personal cognition on green behavior, and does not explore the influencing factors of administrative leaders.

Ahmad et al. confirmed that green human resource management has a positive impact on green innovation [87]. Pro-environmental behavior mediates the relationship between green human resource management and green innovation. Ahmad et al. explore the impact of human resource management and pro-environmental behavior on green innovation. The operation of Taiwan's government agencies does not have a green innovation orientation. This paper mainly focuses on green office attitudes and behaviors of civil servants. We did not explore the relationship between green innovation and green behavior.

Foster et al. confirmed that green lifestyles positively affect pro-environmental behavior [28]. However, environmental commitment, environmental consciousness, green self-efficacy, and green human resource management did not significantly affect pro-environmental behavior [28]. Similar to the research results of Foster et al., this paper confirms that a green lifestyle is a predictor of green behavior. This paper also confirms that environmental consciousness and human resource management are predictors of green behavior, which is different from Foster et al.'s research results. The human resource management variables used by Foster et al. are considered to be positive predictors, while perceived formalism and ritualized performance appraisal in this paper are negative predictors.

Akhound et al. confirmed that subjective norms and family attitudes can affect the willingness to save energy in offices [88]. In addition, personal moral norms are also a major variable affecting individuals' willingness to save energy. The green conscientiousness and moral reflectiveness adopted in this paper are similar to the personal moral norms adopted by Akhound et al., which will positively affect the green behavior of civil servants.

7. Theoretical and Practical Implications

Empirical studies on the effects of perceived formalism on civil servants are scarce. This study used empirical data to examine the effects of the degree of perceived formalism on civil servants' attitudes and perceptions. In addition to complementing the criticism of the lack of empirical data on formalism, this study also identified the effect of perceived formalism on patterns of green behavior.

This study has confirmed the negative impact of perceived formalism on civil servants' green behavior. In order to reduce the negative impact of civil servants' perceived formalism on public administration and green behavior, civil servants must enforce regulations that are evidence-based and measurement-based. The work of civil servants is evidence-based and measurement-based, which can reduce the problem of "ritualized performance appraisals". Government agencies must establish clear objectives and a long-term road-map for civil servants to follow. Human resource management in government agencies should focus on transparency, professionalism, and outcomes. These practices should reduce the formalism problem raised by Riggs [30].

Green human resource training can promote the benefits of green workplace behaviors and encourage executives and civil servants to become role models of green behavior in the workplace. Civil servants' workplace green behavior can also be rewarded in civil service manpower management. Positive encouragement of green behavior may be more effective than negative punishment. In order to improve the green advocacy of civil servants, government agencies must first confirm the advocacy issue, root causes, and evidence base, and then confirm the strengths, limitations, and partnerships of green advocacy. Civil servants can enhance their knowledge and skills related to green behavior through green advocacy.

8. Research Limitations and Future Research Suggestions

The use of convenience sampling in this study may cause problems with "sample bias" or "selection bias". Due to time and financial constraints, only 250 participants were sampled in this study. It is suggested that future researchers should collect larger samples for generalization. The results from exploring the formalism variables with the Taiwan sample cannot be generalized to other countries. Such research may be influenced by cultural background and specific perceptions. It is suggested that future researchers should collect multi-country samples for comparison. Because there are few administrative studies exploring the influence of formalism variables, few papers can be cited in this paper. It is recommended that more scholars explore the impact of formalism on administrative management in the future. Although this study conducted many model fitness, reliability, and validity analyses to validate the conceptual model, the complete conceptual model needs to be verified by more datasets or machine learning in the future. In terms of uncertainties of the applied analysis, the choice of variables in the conceptual model of this paper may be oversimplified. In the future, more research is needed that incorporates independent and dependent variables related to green behavior.

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