



## Article

# How Does Leader's Support for Environment Promote Organizational Citizenship Behaviour for Environment? A Multi-Theory Perspective

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**Abstract:** Organizational citizenship behaviour for environment of employees is indispensable in realizing environmental sustainability goals of organizations. However, in the growing literature of employee green behaviour at work, scant attention has been paid on the impact of leader's specific support for environment, and the mechanisms through which it impacts organizational citizenship behaviour for environment. Drawing upon social exchange theory, self-determination theory and theory of normative conduct, we tested the impact of leader's support for environment, autonomous motivation for environment and perceived group's green climate on organizational citizenship behaviour for environment in an integrated model. The sample included 313 executive level employees of green implemented textile and apparel manufacturing factories in Sri Lanka. The results of structural equation modelling showed a direct positive impact of leader's support for environment on organizational citizenship behaviour for environment. Further, autonomous motivation for environment and perceived group's green climate were found to be partial mediators between leader's support for environment and organizational citizenship behaviour for environment. We discussed the theoretical implications for sustainability literature and the managerial implications for organizational practitioners in promoting organizational citizenship behaviour for environment.

**Keywords:** autonomous motivation for environment; employee green behaviour; leader's support for environment; organizational citizenship behaviour for environment; perceived group's green climate

## 1. Introduction

Environmental sustainability is an apparent discourse within organizational setting [1]. In the business and management spheres, environmental sustainability is synonymous with corporate greening. Corporate greening is seen as one of the critical challenges faced by present-day organizations [2,3]. Organizations have traditionally inclined to depend more on physical structures, technology, systems and formal programmes in implementing greening. However, in the endeavour of corporate greening, "... workforces, from individual contributors to organizational leaders, are at the core of environmentally responsible organizations" [3] (p. 503). Thus, effective implementation and reinforcement of corporate greening efforts largely depend on the degree to which employees

actively embrace green behaviour [4–10]. In view of this, the new challenge for human resource management practitioners is to generate, develop and maintain a green workforce that demonstrates green behaviour as individuals and as teams [11–13].

Employee green behaviour is a workplace-specific form of pro-environmental behaviour of employees which is categorized into required employee green behaviour and voluntary employee green behaviour [14]. Required employee green behaviour and voluntary employee green behaviour are distinctive concepts with unique antecedents [15,16]. Required employee green behaviour is defined as the “... green behaviour performed within the context of employees’ required job duties” [14] (p. 105), whereas voluntary employee green behaviour refers to “... green behaviour involving personal initiatives that exceeds organizational expectations” [14] (p. 105). Voluntary employee green behaviour is identified as a form of organizational citizenship behaviour and alternatively known as Organizational Citizenship Behaviour for Environment (OCBE) [4,5,17–19]. OCBE refers to individual behaviour, that may be performed by employee situated at any organizational level, that is discretionary, not prescribed in the job description, not explicitly recognized by the formal reward system, and, in the aggregate, benefits both the organization and natural environment [4,5,17,18,20–24]. OCBE includes eco-initiatives, eco-civic engagements and eco-helping behaviour of employees [17].

OCBE is of immense importance in the environmental sustainability of organizations for several reasons. First, the majority of the employee green behaviour at work is voluntary in nature and difficult to compile into formal job roles [3,4,17,24,25]. Second, the effectiveness of formal environmental management practices often depend on OCBE since voluntary employee green behaviour compensates for the weaknesses of formal practices, systems and technologies [4,5,23–25]. Third, the cost associated with OCBE is minimum [26]. Fourth, although individual’s voluntary green behaviour may seem insignificant, such behaviour when accumulated organization wide and over time creates a substantial impact on organizational environmental performance [17–19,25,27,28]. Accordingly, generating and promoting OCBE is essential in reaching environmental sustainability goals of organizations. In doing so, organizational practitioners should be aware of why employees engage in organizational citizenship behaviour for environment.

There is a burgeoning scholarly interest in examining employee green behaviour [1,16,18,20,29–39] providing valuable insights on promoting green behaviour of employees at work. Employee green behaviour literature highlights two types of leader support; the general support of the leader [23] to subordinates which is termed as perceived supervisory support and the specific support of the leader for environmental sustainability which is identified as leader’s support for environment or perceived supervisory support for environment [24,29,40,41]. Interestingly, Paillé et al. [23] focused on general supervisory support and found a negative impact of perceived supervisory support on OCBE paving the way for further scrutiny of the link. This also suggests the use of environmental specific support over general support of the leader as predictor of OCBE. Although some studies found that leader’s specific support for environment positively affect environmental behaviour of subordinates [29,40,41], those studies do not distinguish between required and voluntary nature of employee green behaviour resulting in the inability to comprehend the distinctive impact of leader’s support for environment on OCBE. Given the necessity of OCBE in environmental sustainability in organizations, the conceptual distinction of required and voluntary types of employee green behaviour and the uniqueness of antecedents of voluntary green behaviour, a scanty attention has been paid on examining the effect of leader’s support for environment on OCBE. Thus, the impact of leader’s support for environment on OCBE needs further study [42]. In addition, it is worth investigating the mechanisms through which leader’s support for environment impacts OCBE. With the exception to Raineri and Paillé [24] who found that environmental support of line managers impacts OCBE through employee’s environmental commitment, the other mechanisms through which leader’s support for environment leads to OCBE are rarely examined. Furthermore, since OCBE is relatively novel and complex, understanding the integrated network surrounding this concept is important in promoting this behaviour in the

workplace [24]. Connected to this dearth of integrated perspective in conceptualizing the antecedents of OCBE, Paillé and Mejía-Morelos [43] called for future research that uses combination of theories in grounding the conceptualization of antecedents of OCBE in order to ensure theoretical soundness. In this backdrop, drawing upon the theoretical lenses of social exchange theory, self-determination theory, and theory of normative conduct, we developed an integrated model with the purpose of examining the direct impact of leader's support for environment on OCBE and the indirect impact of leader's support for environment on OCBE through autonomous motivation for environment and perceived group's green climate.

Our study contributes to employee green behaviour literature in four ways. First, we replicate the direct effect of leader's support for environment on OCBE by reasoning out the rationale behind this link with the support of social exchange theory, thereby, supporting the robustness of the previous findings. Second, a few research show that the supportive supervisory behaviour for environment impacts on employee green behaviour through employee commitment to employee green behaviour [24,29]. We add two further mechanisms through which leader's support for environment impacts OCBE by testing the mediating roles of autonomous motivation for environment and perceived group's green climate with the theoretical support. In particular, unearthing two novel interwoven chains of relationship of how leader's support for environment impacts OCBE is a clear stride forward in expanding conceptual boundaries of voluntary employee green behaviour research. Third, leader's support for environment is identified as a predictor of autonomous motivation for environment and perceived group's green climate with theoretical reasoning from social exchange theory and self-determination theory. Accordingly, we have discovered a source that enhances autonomous motivation for environment and perceived group's green climate. Fourth, this study applies social exchange theory, self-determination theory, and theory of normative conduct to theorize the antecedents of OCBE. Use of three theoretical lenses in explaining a model of OCBE is special in employee green behaviour literature. Thus, this study fulfils the much needed multi-theory approach to examine voluntary employee green behaviour and answers a recent call for research by Paillé and Mejía-Morelos [43].

The remainder of the article is structured as follows. In the next section, the theoretical background is explained and hypotheses are proposed. After that, the methodology is presented, followed by the results of the analysis and main findings. Finally, theoretical and practical implications, limitations of the study, future research directions are given and the paper ends with conclusion.

## 2. Theoretical Background and Hypotheses

### 2.1. Social Exchange Theory and Impact of Leader's Support for Environment on OCBE

Social exchange theory originated in the late 1950s and evolved through the early 1960s with contributions from George Homans, John Thibaut, Harold Kelley, and Peter Blau. Psychological, sociological, social psychological and economic perspectives contributed to the development of social exchange theory [44,45].

Social exchange theory is a broad theory that explains human exchange relations both at micro and macro levels [44]. It suggests two forms of exchange relations in organizational setup: economic and social [46]. Economic exchange is explicit and contractually bound with defined terms and associated monetary rewards in an employment relationship. In contrast, social exchanges are usually unspecified obligations which are connected with non-monetary aspects of employment relationships and often involve indirect chains of exchange [46].

Social exchange theory proposes that social exchanges are based on the premise of norm reciprocity between parties [47]. Reciprocity refers to an inner obligation that arises within a person to repay another party since he or she is taken care of by that particular party [46]. The norm of reciprocity makes two inter-related demands: "(1) people should help those who have helped them, and (2) people should not injure those who have helped them" [47] (p. 171). The norm of reciprocity works as

a mechanism in maintaining stability of a social system which may be a group, an organization or the general society [47].

In organizational domain, social exchange theory is one of the most prominent conceptual perspectives in explaining employee behaviour [48]. Social exchange theory has been used in diverse organizational research areas including: organizational citizenship behaviour, commitment, justice, supervisory support, and organizational support [48]. In organizational setting, social exchange begins when an actor (e.g., organization, manager employee) treats a target individual in a positive (e.g., support and justice) or negative manner (e.g., abusive supervision, rude, and bullying). In response to the first actor's action, the target actor reciprocates positively (e.g., care, loyalty, commitment, organizational citizenship behaviour, etc.) or negatively (e.g., avoidance, neglect, violence, etc.) towards the first actor. These reciprocal responses can be either relational responses or behavioural responses.

Employee discretionary actions and extra-role behaviours involve unspecified obligations that reflect social exchanges [49]. Therefore, social exchange theory provides a firm theoretical background in explaining employee engagement in voluntary behaviour [50,51]. Owing to the discretionary nature and non-recognition in the formal reward system, OCBE is clearly relevant to social exchange.

Leader's support for environment refers to the degree to which the leader supports followers in environmental sustainability at work. Leaders support employees to be environmentally sustainable in a variety of ways such as providing the freedom to employees to act in environmentally friendly manner, encouraging employee environmental initiatives, building environmental competencies of group members, promoting open communication on environmental issues, helping subordinates to engage in green behaviour, appreciating employee environmental behaviour and engaging subordinates in environmentally friendly behaviour [28]. Evidently, mere execution of the leader's legitimate power through subordination practices and fulfilment of contractual obligations do not induce employees to go beyond their formalities and exhibit discretionary green behaviour [4]. In contrast, supportive behaviour of leader is strongly related to organizational citizenship behaviour of employees [52]. Since OCBE is a form of organizational citizenship behaviour which favours both organization and the environment, we use leader's support for environment over the general leader support as an antecedent of OCBE.

Once the group leader specifically facilitates the employees in environmental sustainability, a social exchange emerges between the leader and the group member. Thus, as per social exchange theory, group member who has received environmental support from the group leader reciprocates. In addition, by supporting group members on environmental sustainability, a group leader passes a strong signal to members about leader's concern and value on environmental sustainability beyond the formal job role expectations. Thereby, the group member receives an indication from the leader on the suitable behaviour to be displayed in reciprocation. Accordingly, the employee reciprocates by voluntarily helping others to be more environmentally sustainable, suggesting eco-initiatives and actively engaging in greening activities. Further, previous empirical findings also support the idea that leader's support for environment positively associates with OCBE [24,28,29,41,53]. Therefore, based on social exchange theory perspective and prior empirical evidences, we postulate that:

**Hypothesis 1.** *Leader's support for environment positively impacts OCBE.*

## 2.2. Self-Determination Theory and Impact of Autonomous Motivation for Environment on OCBE

Self-determination theory is an empirically grounded psychological theory which focuses on human motivation, development and wellness [54]. It has been applied in wide variety of applied domains including work, relationships, parenting, education, virtual environment, sports, health care, and psychotherapy [54]. The basic ideology of self-determination theory is that people not only have different levels of motivation, but also have different kinds or types of motivation [54,55].

Self-determination theory posits three types of motivation: Amotivation, Autonomous Motivation and Controlled Motivation. Amotivation refers to null motivation or lack of intention and motivation [54]. Autonomous motivation affirms that an individual pursues activities that are consistent and concordant with the underlying self [56]. Autonomous motivation highlights the self-determination of the person and is comprised of identified motivation, integrated motivation and intrinsic motivation [56]. “Controlled motivation, in contrast, consists of both external regulation, in which one’s behavior is a function of external contingencies of reward or punishment, and introjected regulation, in which the regulation of action has been partially internalized and is energized by factors such as an approval motive, avoidance of shame, contingent self-esteem, and ego-involvements” [54] (p. 182).

Self-determination theory explains how external motivations become self-determined to generate autonomous motivation. This conversion process is termed as internalization which refers to “taking in a behavioural regulation and the value that underlies it” [56] (p. 333). There are three different ways of internalization: introjection, identification and integration. Introjected regulation, a part of controlled motivation, is referred to as a condition that a person has taken in a behavioural regulation but has not accepted it as his or her own. People introject in order to feel worthy and involved in ego [56]. Identified motivation refers to the inducement to pursue an activity since it matches one’s individual values and goals. Identified motivation increases the congruency between a person’s behaviour and goals as well as identity. Thus, individuals with high level of identified motivation sense greater freedom and volition [56]. “With integrated regulation, people have a full sense that the behaviour is an integral part of who they are, that it emanates from their sense of self and is thus self-determined” [56] (p. 335). Therefore, integrated motivation is the comprehensive type of internalization which permits extrinsic motivation to be fully autonomous with free will [56]. The third composition of autonomous motivation is the intrinsic motivation. Intrinsically motivated people perform an activity because it is inherently interesting or pleasurable for them to engage in. Overall, autonomously motivated people experience volition or a self-endorsement of their actions [57].

Self-determination theory also postulates that types of motivation predict performance, relational and well-being outcomes of a person [54]. Accordingly, self-determination theory theorizes that the type of motivation possessed by an individual is a significant determinant of the behaviour. Notably, autonomous motivation, in contrast to controlled motivation, yields greater psychological health, more effective performance on heuristic types of activities and ensures greater long-term persistence of the particular behaviour [54].

Although employee motivation is a well-established concept that predicts workplace behaviour [57], except Graves et al. [6] and Kim et al. [58], who used motivation to predict pro-environmental behaviour, previous studies on voluntary employee green behaviour have overlooked the probable influence of employee motivation on OCBE. Therefore, with a view to widen the understanding of the role of motivation in influencing voluntary employee green behaviour, we bring self-determination theory [55–57,59] as a theoretical ground in proposing autonomous motivation for environment, which refers to the level of self-determination to act towards environment as a possible predictor of OCBE.

In workplaces, autonomous motivation predicts and promotes various behavioural outcomes and organizational citizenship behaviour is one such outcome [56]. OCBE is a voluntary behaviour which is more likely to be induced by autonomous motivation of the person since serving environment is congruent with personal values and goals, integrated into the self and interesting to do. Thus, environmental citizenship behaviour deemed to be more self-determined [24]. Graves et al. [6] and Kim et al. [58] found that employees’ autonomous motivation for environment as a proximate cause of pro-environmental behaviour of Chinese employees and hospitality employees in South Korea, respectively. However, these studies did not use intrinsic motivation dimension in measuring autonomous motivation for environment and also did not distinguish the impact of autonomous motivation for environment on required employee green behaviour and voluntary employee green



behaviour. Thus, in linking autonomous motivation for environment specifically to OCBE, based on self-determination theory, we posit that:

**Hypothesis 2.** *Autonomous motivation for environment positively impacts OCBE.*

### 2.3. *The Link of Leader's Support for Environment, Autonomous Motivation for Environment and OCBE*

Self-determination theory postulates that intrinsic motivation is an inherent organismic propensity which is aroused by the conditions that ease the expression of it [55]. Accordingly, there can be social and environmental contexts that facilitate or undermine intrinsic motivation which is one of the key aspects of autonomous motivation. The sense of competence, autonomy and relatedness are identified as universal needs that are essential activators of autonomous motivation [57]. The feeling of competence which is accompanied by sense of autonomy that “involves acting with a sense of volition and having the experience of choice” [56] (p.333) enhance intrinsic motivation [55]. Leaders support environmental efforts of employees by providing them required opportunity to engage in environmental friendly ways, helping them to engage in environmental friendly manner, encouraging environmental initiatives, building environmental competence, and engaging them in environmental projects, promoting open communication, and informally recognizing employee initiatives [28,53]. From self-determination theory's perspective, leader's support for environment enriches the sense of competence and autonomy of group member to engage in environmental behaviour. Thus, leader's support for environment provides nutriment of autonomous motivation for environment. Therefore, leader's support for environment should positively affect autonomous motivation for environment. While leader's support for environment fosters autonomous motivation for environment, as argued previously, autonomous motivation for environment is proposed to be a predictor of OCBE. Some empirical findings also provide evidence that autonomous motivation mediates the link between transformational leadership and pro-environmental behaviour of employees [6,60]. Thus, autonomous motivation for environment is supposed to act as a mediator between leader's support for environment and OCBE. Based on self-determination theory and previous related empirical findings, we postulate the following hypotheses:

**Hypothesis 3.** *Leader's support for environment positively impacts autonomous motivation for environment.*

**Hypothesis 4.** *Autonomous motivation for environment mediates the relationship between leader's support for environment and OCBE.*

### 2.4. *Theory of Normative Conduct and the Impact of Perceived Group's Green Climate on OCBE*

Theory of normative conduct is a theoretical perspective, originated from sociology and social psychology, focuses on the link between norms and behaviour. Norms refer to what is done and what ought to be done [61] and accordingly two types of norms can be identified; social norms and personal norms. Social norms are the accepted behaviours that an individual is expected to conform to in a given social setting like a group, a community, an organization or a culture. Personal norms, also called moral norms, are related to feelings of moral obligation and deal with personal beliefs about what is right or wrong [62].

The basic tenet of theory of normative conduct is that it attributes behaviour to social norms [63]. Theory of normative conduct distinguishes two types of norms: injunctive and descriptive. Injunctive norms refer to “rules or beliefs as to what constitutes morally approved and disapproved conduct” [63] (p. 1015). The descriptive norms describe what most people generally do in normal circumstances. Therefore, descriptive norms refer to what is done and injunctive norms refer to what should be done. These two social norms are conceptually and motivationally distinct and can exist simultaneously in a given setting. Further, these norms can create either congruent or contradictory implications for behaviour [63].

In summary, descriptive norms promote behaviour of individuals by providing support and evidence to the most appropriate behaviour to be displayed by a person based on the logic that “if everyone is doing it, it must be a sensible thing to do” [63] (p. 1015). Thus, it promotes the conduct is likely to be effective and adaptive in a social milieu. This perception of what most others do, therefore, influences the person to behave similarly in a given social setting [63]. In addition, a particular social norm is likely to influence or activate behaviour when it is salient for an individual at the time of behaviour [61,64] and different situations such as supportive leader and personal dispositions such as personal norms arouse the norm salience.

Facet specific work climates such as ethical, innovative, safety, diversity, initiative, and family supportive climates have a significant effect on attitudes and behaviour of employees [65]. Green work climate, the latest added into the facet-specific organizational climates, refers to employee perceptions of organizational characteristics and behavioural norms within an organization that are relevant to environmental sustainability [16,66]. Green work climate has two perspectives: first, climate perceptions of the organization which are reflections of injunctive norms; and, second, climate perceptions of co-workers which are related to descriptive norms [16]. Since our focus is on voluntary employee green behaviour of employees who work in groups, we considered group’s descriptive norms about greening to capture perceived group’s green climate. Thus, based on theory of normative conduct’s descriptive norms classification, perceived group’s green climate refers to workgroup member’s perception of what is typically observed among group members in relevance to green behaviours. When a group member perceives the display of green behaviours such as voluntary participation in environmental activities, bringing new ideas benefitting the environment, and helping each other in engaging in greening by other group members, the group member forms a descriptive norm that the group typically behaves positively towards the environment. This positive green descriptive norm influences the group member to act in norm consistent way which fosters displaying similar behaviour at work. Hence, consistent with theory of normative conduct, perceived group’s green climate influences OCBE. Accordingly, we posit the following hypothesis:

**Hypothesis 5.** *Perceived group’s green climate positively impacts OCBE.*

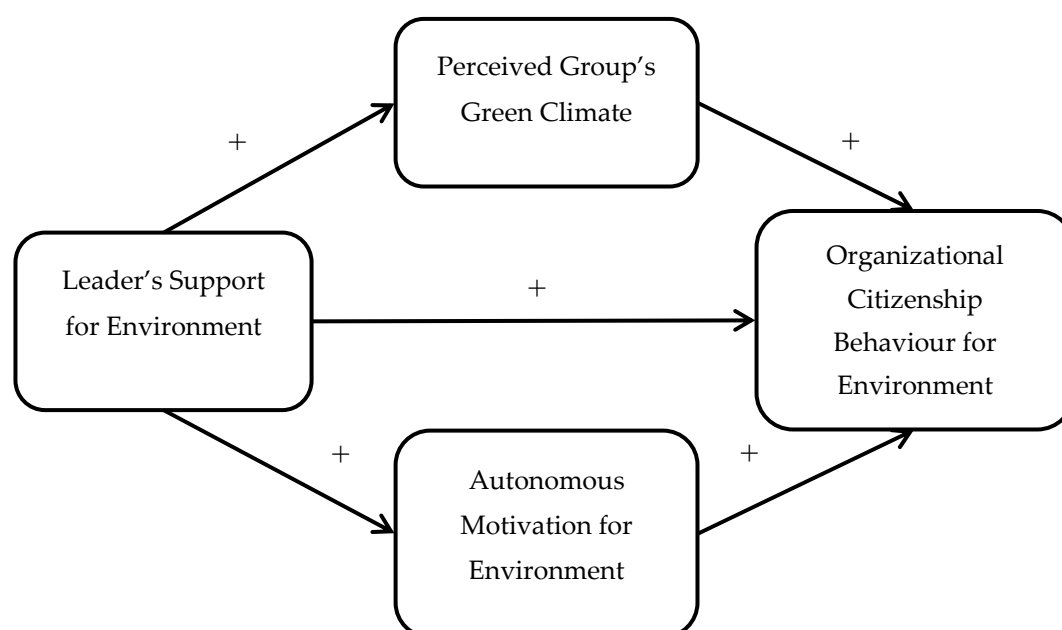
## 2.5. The Link of Leader’s Support for Environment, Perceived Group’s Green Climate and OCBE

Leader’s support for environment is supposed to influence perceived group’s green climate in two ways. First, social learning effect suggests that the group leader’s supportive behaviour tends to be imitated by group members fostering a condition in which group members promote supportive environmental behaviour within the group. Helping others to engage in environmental sustainability is considered as a kind of OCBE [17]. Therefore, leader’s support for environment promotes eco-helping among the group members leading to perceived observation of green behaviour within the group by the group member. Second, since group leader is proximate to the group, it is possible that the group leader’s influence not only impacts individual employees within the group but also impacts the entire membership collectively. Accordingly, as per reciprocity norm of social exchange theory, we propose a dual reciprocation within a group: first, the reciprocation between the leader and a member; and, second, the reciprocation between the leader and the group. In view of dual reciprocation, a tendency develops that all the members in the group display OCBE in exchange of the environmental specific support received from the group leader and creates the context for a member to perceive higher engagement in environmentally friendly behaviour by other members in the group. Hence, higher the group leader’s support for environment, the higher will be the perceived group’s green climate. Further, concerning the links of leader’s support for environment to perceived group’s green climate and perceived group’s green climate to OCBE, we propose that perceived group’s green climate act as a mechanism through which leader’s support for environment impacts OCBE. Thus, we posit that:

**Hypothesis 6.** *Leader’s support for environment positively impacts perceived group’s green climate.*

**Hypothesis 7.** *Perceived group's green climate mediates the link between leader's support for environment and OCBE.*

Figure 1 shows the conceptual framework of the study which portrays the impact of leader's support for environment, autonomous motivation for environment, and perceived group's green climate on OCBE.



**Figure 1.** Conceptual Framework.

### 3. Methodology

#### 3.1. Participants and Procedure

The participants of the study represent textile and apparel manufacturing industry in Sri Lanka. We considered this industry for several reasons. First, the majority of the studies in employee green behaviour are conducted in the service sector in developed economies, leaving the reality of voluntary employee green behaviour in high environmental impact manufacturing sector [67] within developing economies. Second, this industry plays a significant role in Sri Lanka's economy by being the single largest export income earner and providing over 300,000 direct employment opportunities [68]. Third, this industry mainly exports its products to USA and European markets. Thus, the promotion of environmental sustainable manufacturing is sensible to gain continuous orders from the "green" sensitive markets that it serves. Fourth, textile and apparel manufacturing industry, being a labour intensive sector, has an inherent capacity of contributing to the environment by promoting OCBE of its employees.

In this study, we purposefully selected 12 factories based on their commitment to environmental sustainability by obtaining ISO14001 certification. The unavailability of a published list on green initiated factories in textile and apparel manufacturing industry in Sri Lanka forced us to purposefully select the factories. We contacted 12 factories via emails for permission to conduct the survey. Five factories granted permission. We focused on executive level employees who work in small groups (3–7 members) in human resources, cutting, production, quality, stores, mechanical engineering, and maintenance sections of the factories. We used three exclusion criteria to identify the sample of executive level employees. First, since the focus of the study is on voluntary employee green behaviour, the executives whose job designation is environmental sustainability were excluded. Second, new group members who had less than six months interaction with the group were



excluded. Third, executive employees who are working in workgroups in which the leader had less than six months experience in the group were also excluded. We, with the support of human resource management departments of each factory, identified 347 executive level group members who represented 74 work groups.

Most of the previous studies on leader's support for environment on employee green behaviour were based on self-rated data from a single source that may lead to common method bias [69]. We filled this void by using multisource data from executive employee and respective group leaders. We collected the data by using two questionnaires. The first questionnaire was employed to collect data from executive employees and the second questionnaire was used to gather data from respective group leaders. The first questionnaire captured each executive employee's self-reported perceived group's green climate, autonomous motivation for environment, rating on the respective group leader's support for environment and demographic variables including age, gender, tenure, and highest educational qualification. We administered this questionnaire in groups where each work group was invited to a meeting room and explained the nature and purpose of the study to respondents. We took caution not to allow the group members to interact with each other while responding to the questionnaire. Second, a self-administered questionnaire which captured the group leader's rating on each group member's OCBE was given to the respective group leaders. Both questionnaires were in English since executives and managers in Sri Lanka are conversant in English.

Poor responses from executives of four groups and incomplete data by two group leaders forced us to drop 34 potential respondents. Therefore, the final sample consisted of 313 executive employees yielding a response rate of 90%. The majority (75.4%) of the 313 respondents were males. Of the respondents, 66.8% were in the age group of 25–34 years, while 26.2% in the age group of 35–44 years. Married respondents comprised 60.1%, and 39.9% were single. The majority of respondents (55.6%) had tenure less than five years, while 27.5% had tenure of 5–10 years. Of the respondents, 60.1% have degree level educational qualifications, while 21.1%, 6.1% and 11.8% of the respondents have diploma, postgraduate diploma and MBA/MSc level qualifications, respectively.

### 3.2. Measures

OCBE was measured by using the 10 item scale developed by Boiral and Paillé [17]. A sample item included "Though it is not expected from his/her job he/she voluntarily carry out environmental actions and initiatives in his/her daily work activities". Leaders were asked to indicate the frequency of displaying voluntary green behaviour at work by their group members on five-point Likert scales ranging from 1 (never) to 5 (very often). We used four-item green work climate perception of co-workers scale by Norton et al. [16] to measure the perceived group's green climate. We slightly changed the wordings of statements in the original scale to suit the group context. We replaced "in my company" to "in my workgroup" and "employees" to "group members". A sample item included "In my workgroup, group members pay attention to environmental issues". We measured leader's support for environment by using the five-item supervisory support scale of Ramus [28]. We also slightly changed the wordings of statements to suit our study context by replacing the phrase "my immediate supervisor" to "my group leader". A sample item includes "My group leader encourages environmental initiatives". In both perceived group's green climate and leader's support for environment scales, participants rated the extent to which they agree or disagree to the statements on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). We measured autonomous motivation for environment, as suggested by Raineri and Paillé [24], by using 12 items from the Motivation Towards Environment Scale of Pelletier et al. [70]. Of note, unlike previous researchers [6,58] who did not use intrinsic motivation as a part of autonomous motivation, as advocated by self-determination theory, we considered autonomous motivation for environment as a construct that comprises identified motivation, integrated motivation and intrinsic motivation. Each item preceded "Why are you doing things for the environment?". A sample item included "it is pleasure in improving quality of environment". The respondents were asked to indicate

the extent to which each item corresponds to their personal motives for engaging in environmental behaviour on a five-point scale ranging from 1 (does not correspond at all) through 3 (corresponds moderately) to 5 (corresponds exactly).

#### 4. Results

We employed Structural Equation Modeling (SEM) using Analysis of Moment of Structure (AMOS) 23. First, we conducted preliminary analysis in Statistical Package for Social Sciences (SPSS) 23 to ensure the data is suitable for SEM. Then, we tested the measurement model to ensure validity of the constructs. Next, we constructed the structural model and tested the hypotheses. Since AMOS does not provide specific indirect effects, we supplemented the mediation analysis by performing bootstrapping in PROCESS macro for SPSS as recommended by Hayes [71].

##### 4.1. Preliminary Analysis

Sample size of 313 is sufficient enough for SEM analysis because it exceeds 200 [72]. We observed some missing values in the data set. We replaced each missing value with the mean of the non-missing responses for a particular case on the items within that particular measurement scale [73]. Absolute skewness values of leader's support for environment, perceived group's green climate, autonomous motivation for environment and OCBE were within +1 to −1 supporting sufficiency of normality in data [74]. Linearity test for all the sets of variables was significant ( $p = 0.000$ ). All of the Variation Inflation Factor (VIF) values between the independent variables were below the cut-off value of 3 indicating nonexistence of multicollinearity [73]. A violation of independence of error was not visible since all the Durbin–Watson test statistics are close to two [75]. As mentioned in Section 3, although we took practical caution by not measuring both predictor variables and criterion variable from the same source, we conducted Harmon's Single Factor test to identify any possible method bias [76]. An un-rotated principal component analysis was run by restricting the number of factors to one. The single factor explained only 46.86% of the total variance evidencing that common method bias is not present in the data set. All scale reliabilities (OCBE:  $\alpha = 0.93$ ; leader's support for environment:  $\alpha = 0.94$ ; perceived group's green climate:  $\alpha = 0.94$ ; autonomous motivation for environment:  $\alpha = 0.95$ ) are well above the threshold Cronbach's Alpha value 0.7 [77]. Table 1 shows the means, standard deviations and correlation coefficients of the variables which were considered in the study.

**Table 1.** Means, standard deviations, and correlations.

Variable	OCBE	LSE	PGGC	AME	Mean	Standard Deviation
OCBE	1.000 **	-	-	-	3.79	0.702
LSE	0.406 **	1.000 **	-	-	3.34	0.881
PGGC	0.570 **	0.502 **	1.000 **	-	3.77	0.752
AME	0.706 **	0.231 **	0.405 **	1.000 **	4.22	0.635

\*\* Correlation is significant at the 0.01 level (1-tailed); OCBE, Organizational Citizenship Behaviour for Environment; LSE, Leader's Support for Environment; PGGC, Perceived Group's Green Climate; AME, Autonomous Motivation for Environment.

##### 4.2. Confirmatory Factor Analysis

We developed the measurement model which consists of OCBE, leader's support for environment, autonomous motivation for environment and perceived group's green climate. In doing so, we considered both OCBE and autonomous motivation for environment as first-order constructs since we used OCBE and autonomous motivation for environment rather than dimensions of constructs in forming hypotheses. The model shows an acceptable fit ( $\chi^2/df = 2.206$ ,  $p = 0.000$ , TLI = 0.942, CFI = 0.951, RMSEA = 0.062) (see Table 2). All the factor loadings, except OCBE 1 and OCBE 3, are above 0.7 ( $p < 0.001$ ). The standardized regression weights of OCBE 1 and OCBE 3 are 0.695 and 0.686, respectively ( $p < 0.001$ ). We did not drop these two items, as Average Variance Extracted

(AVE) values of the constructs exceed the threshold value of 0.5. Hence, convergent validity of the four variables of the study are confirmed [73]. Composite reliability values of all constructs exceed the threshold value of 0.7 ensuring internal consistency of measures [73]. Discriminant validity was evident since AVE values are greater than the squares of inter-construct correlations. Table 3 shows AVE values, composite reliability values and squares of inter-construct correlations.

**Table 2.** Fit indices of the measurement model and cut-off values.

Index	( $\chi^2/df$ )	RMSEA	NFI	TLI	CFI
Threshold Value	<3.0	<0.08	>0.9	>0.9	>0.9
Measurement Model	2.206	0.062	0.915	0.942	0.951
Recommended By	[78]	[79]	[79]	[79]	[80]

Note: AGFI can range 0–1 (higher the better). RMSEA: lower the better. NFI, TLI and CFI can range 0–1.

**Table 3.** AVE values, composite reliability and squares of inter construct correlations.

Variable	OCBE	LSE	PGGC	AME	Composite Reliability
OCBE	<b>0.581</b>	-	-	-	0.960
LSE	0.177	<b>0.752</b>	-	-	0.965
PGGC	0.366	0.252	<b>0.831</b>	-	0.974
AME	0.563	0.056	0.173	<b>0.663</b>	0.977

Note: AVEs are given in diagonal in bold. OCBE, Organizational Citizenship Behaviour for Environment; LSE, Leader's Support for Environment Sustainability; PGGC, Group's Green Climate; AME, Autonomous Motivation for Environment.

#### 4.3. Structural Model and Hypotheses Testing

We tested direct hypotheses by using SEM in AMOS and conducted the mediation analysis in two steps. First, the bootstrap approach was used to estimate the direct effect, total indirect effect and the total effect of the multiple mediation model in AMOS by following the procedure recommended by Cheung and Lau [81]. We used 5000 bootstrap samples with 95% bias-corrected confidence interval. Second, we followed the recommendations of Hayes [71] to assess the specific indirect effects of autonomous motivation for environment, and perceived group's green climate in the link between leader's support for environment and OCBE. According to Hayes [71], the hypothesis related to the each specific mediation effect is supported if the lower and upper limits of the confidence intervals do not contain zero.

We developed two alternative models (full mediation model and model with direct paths only) in addition to the hypothesized partial mediation model. As shown in Table 4, the hypothesized model reported a better fit ( $\chi^2/df = 2.25$ , GFI = 0.86, CFI = 0.95, TLI = 0.94, RMSEA = 0.063) than that of the two alternative models. Therefore, the hypothesized model was used to test hypotheses.

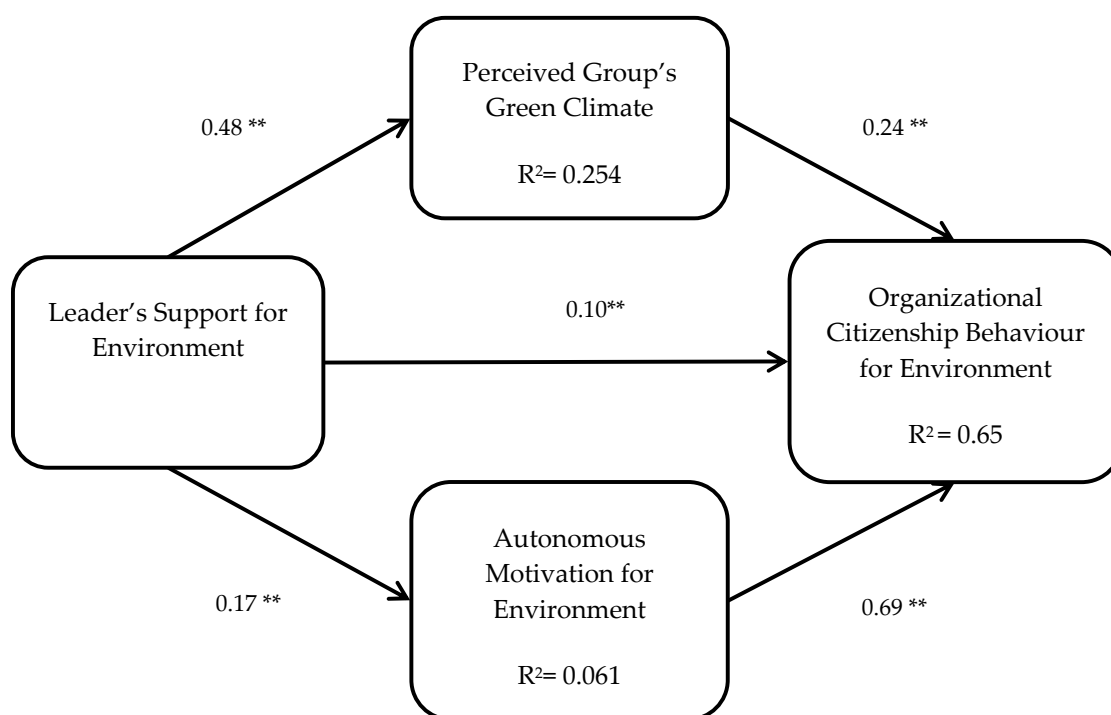
**Table 4.** Structural model fit and model comparison.

Model	$\chi^2/df$	GFI	CFI	TLI	RMSEA	AIC
Hypothesized Model (Partial Mediation)	2.25	0.856	0.949	0.940	0.063	1091.78
Alternative Model 1 (Full Mediation)	2.27	0.856	0.949	0.939	0.064	1097.79
Alternative Model 2 (Direct Paths Only)	2.49	0.843	0.939	0.929	0.069	1186.21

Hypothesis 1 postulated that leader's support for environment positively impacts OCBE. The direct path coefficient between leader's support for environment and OCBE is 0.10 ( $p < 0.001$ ). In addition, the total effect of leader's support for environment on OCBE is 0.31 ( $p < 0.01$ ). Accordingly,

as hypothesized, leader's support for environment is likely to increase OCBE. Thus, Hypothesis 1 is supported.

Second, the path coefficients reported between autonomous motivation for environment and OCBE and perceived group's green climate and OCBE were 0.69 and 0.24, respectively, and both were statistically significant ( $p < 0.01$ ) (see Figure 2). Accordingly, it can be concluded that both autonomous motivation for environment and perceived group's green climate are likely to promote OCBE. Thus, Hypotheses 2 and 5 are supported. Of note, the effect of autonomous motivation for environment on OCBE is higher than that of perceived group's green climate.



**Figure 2.** Path coefficients and  $R^2$ . **Note:** \*\*  $p < 0.01$ .

Third, Hypotheses 3 and 6 stated that leader's support for environment positively impacts autonomous motivation for environment and perceived group's green climate, respectively. As the path coefficients reported between leader's support for environment and autonomous motivation for environment and leader's support for environment and perceived group's green climate are 0.17 ( $p < 0.01$ ) and 0.48 ( $p < 0.01$ ), respectively, Hypotheses 3 and 6 are supported (see Figure 2).

Hypothesis 4 proposed that autonomous motivation for environment mediates the relationship between leader's support for environment and OCBE. The results show an indirect effect of 0.10 ( $p < 0.01$ ) in the leader's support for environment, autonomous motivation for environment, and OCBE chain of relationship. Hypothesis 7 stated that perceived group's green climate mediates the link between leader's support for environment and OCBE. The results show an indirect path coefficient of 0.11 ( $p < 0.01$ ) in the link of leader's support for environment, perceived group's green climate, and OCBE.

The bootstrap analysis in PROCESS macro corroborated the mediating roles of autonomous motivation for environment and perceived group's green climate since the 95% bias-corrected confidence interval of specific indirect effects do not contain zero (see Table 5). Thus, the specific indirect effects are statistically significant [71]. Once both autonomous motivation for environment and perceived group's green climate were included in the model, the direct effect of leader's support for environment on OCBE reduced and remained significant. Thus, autonomous motivation for

environment and perceived group's green climate partially mediate the effect of leader's support for environment on OCBE.

**Table 5.** Specific indirect effects and bootstrapping results.

Path	Estimate	95% Confidence Level		S.E
		Lower	Upper	
LSE → AME → OCBE	0.10 **	0.049	0.170	0.0309
LSE → PGGC → OCBE	0.11 **	0.072	0.153	0.0208

Note: N = 313, Unstandardized path coefficients are reported. \*\*  $p < 0.01$ . OCBE, Organizational Citizenship Behaviour for Environment; LSE, Leader's Support for Environment; PGGC, Perceived Group's Green Climate; AME, Autonomous Motivation for Environment.

Overall, coefficient of determination ( $R^2$ ) of 0.65(see Figure 2) indicates that leader's support for environment, autonomous motivation for environment and perceived group's green climate together explain 65% of the variation of OCBE. Leader's support for environment explains only 6% of the variation of autonomous motivation for environment and 25% of the variation of perceived group's green climate. Table 6 shows the summary of the hypotheses test results

**Table 6.** Summary of the hypotheses test results.

Hypothesis	Estimate	Result
H1: Leader's support for environment positively impacts OCBE.	0.10 **	Supported
H2: Autonomous motivation for environment positively impacts OCBE.	0.69 **	Supported
H3: Leader's support for environment positively impacts autonomous motivation for environment.	0.17 **	Supported
H4: Autonomous motivation for environment mediates the relationship between leader's support for environment and OCBE.	0.10 **	Supported
H5: Perceived group's green climate positively impacts OCBE	0.24 **	Supported
H6: Leader's support for environment positively impacts perceived group's green climate.	0.48 **	Supported
H7: Perceived group's green climate mediates the link between leader's support for environment and OCBE.	0.11 **	Supported
Total Effect	Estimate	Result
Leader's support for environment → OCBE	0.31 **	-

Note: N = 313; unstandardized path coefficients are reported. \*\*  $p < 0.01$ .

## 5. Discussion

### 5.1. Discussion of the Findings

We examined the impact of leader's support for environment on OCBE directly and through autonomous motivation for environment and perceived group's green climate. The findings indicate that leader's support for environment positively impacts OCBE, perceived group's green climate and autonomous motivation for environment. Further, autonomous motivation for environment and perceived group's green climate were found to be partial mediators between the link of leader's support for environment and OCBE, where they had a positive effect on OCBE separately.

The positive impact of leader's support for environment on OCBE is consistent with Raineri and Paillé [24] who found supervisory supportive behaviour to be directly and positively related to OCBE of employees who had studied in a French business school. On the other hand, although the outcome variable (OCBE) of this research covers eco-civic engagement and eco-helping in addition to environmental initiatives, this finding is in line with the finding of positive link between supportive supervisor behaviour and employee environmental initiatives by Ramus [28] and Ramus and Steger [53]. Further, even though Blok et al. [40] did not distinguish between task pro-environmental



behaviour and voluntary pro-environmental behaviour, this research finding goes hand in hand with their finding of leadership support for environment directly impact on pro-environmental behaviour. However, this research finding is contrary to the finding of Paillé et al. [23] that there is a direct negative relationship between general perceived supervisory support and OCBE. This contradiction could be due to the difference in the leader supportive behaviour used in two studies as general and environmental specific. The discrepancy in turn may imply what is appropriate in promoting voluntary employee green behaviour at work place is the environmental specific leader support instead of the general leader support.

The finding that autonomous motivation for environment positively impacts OCBE is congruent with the premise of self-determination theory where autonomous motivation leads to display of voluntary behaviour. This finding also reconciles the favourable effect of autonomous motivation on private sphere pro-environmental behaviour [70]. Further, although Graves et al. [6] and Kim et al. [58] did not distinguish between task-related and voluntary pro-environmental behaviour, the finding of this research is compatible with their findings. Moreover, our finding is in accordance with Afsar et al. [39] who found that intrinsic motivation is positively related to pro-environmental behaviour at work. Notably, there is relatively a higher impact of autonomous motivation for environment on OCBE in comparison to the direct effect of leader's support for environment and perceived group's green climate on OCBE, respectively. This signifies the relative importance of the individual's motivational state in promoting voluntary employee green behaviour over the perceived group norms and support from another party.

Leader's support for environment leads to improve the employee's self-determination in greening and in turn influences the display of OCBE. This is partially consistent with the findings of Graves et al. [6] that autonomous motivation mediates the relationship between transformational leadership and pro-environmental behaviour. Although conceptually different, this finding is somewhat compatible to the mediation effect of intrinsic motivation which was uncovered by Afsar et al. [39] between workplace spirituality and pro-environmental behaviour.

The fact that perceived group's green climate has a positive impact on OCBE is consistent with theory of normative conduct and provides evidence for influence of descriptive norm on the individual employee's OCBE. Our result falls in line with finding of Norton et al. [16] that green work climate perceptions of co-workers positively affect proactive employee green behaviour. Further, this finding coextends the findings of positive impact of organizational green climate on pro-environmental behaviour of hotel employees in Poland by Zientara and Zamojska [33]. In addition, the fact that perceived group's green climate partially mediates leader's support for environment and OCBE link is consistent with our argument based on social exchange theory where leader's support for environment is reciprocated by the group and the individuals that lead to positive green descriptive norm; and as per theory of normative conduct, these group's descriptive norms in turn impact the individuals to perform OCBE. Therefore, the integration of effects suggested by social exchange theory and theory of normative conduct explain the rationale behind how the effect of leader's support for environment cascade down to OCBE through the fostering of positive group green climate. Even though not exactly similar in terms of conceptualizing the link, this is consistent with the findings of Kim et al. [1] that workgroup green advocacy mediates the relationship between leader's green behaviour and subordinates green behaviour. It also supports the mediating role played by green work climates perceptions of co-workers between perceived sustainable policy and proactive employee green behaviour [16]. Therefore, by examining leader's support for environment, perceived group's green climate, autonomous motivation for environment and OCBE link in an integrated model, this study extends the line of research that investigate the rationale for engaging in voluntary green behaviour by employees at the work sphere.

### 5.2. Theoretical Implications

First, our research findings indicate that exchange relations in combination of self-determination and normative influences decide voluntary employee green behaviour. Specifically, the effect of leader's support for environment leads to OCBE through norms about group's green behaviour and self-determination of the individual. This implies the merit of applying multi-theory perspective over the application of single theoretical lens in conceptualizing and understanding voluntary employee green behaviour. Therefore, the application of different theoretical perspectives in understanding voluntary employee green behaviour seems to be rational and is reinforced.

Second, the positive effect of leader's support for environment on perceived group's green climate is quite unique in the literature of both organizational behaviour and environmental sustainability. This finding signifies that, in group context, both individual reciprocation and group reciprocation can occur simultaneously in return to the environmental specific support received from the supervisor, although it is prudent to further investigate this dual reciprocation. Further, the impact of environmental specific support of the leader seems to be more relevant to OCBE studies than that of general supervisory support while, partial mediation of autonomous motivation for environment and perceived group's green climate between leader's support for environment and OCBE hints the possibility of further channels through which leader's support for environment could impact OCBE.

Third, by bringing first-hand evidence on antecedents of OCBE from employees in Sri Lanka as a developing country in South Asia and of the textile and apparel manufacturing industry, a high environmental impacting industry [67], we expanded the existing contextual boundaries of employee green behaviour knowledge base. The consistent nature of the findings of our study with previous studies in other developed economy and service sector contexts suggests that voluntary employee green behaviour is a more universal construct than a context specific construct.

### 5.3. Managerial Implications

In promoting OCBE among executive level employees, group leader's support for environment seems to play a pivotal role for two key reasons. First, the leader's support for environment has a direct impact on OCBE of executive level employees even in the absence of the effects of autonomous motivation for environment and perceived group's green climate. Second, the leader's support for environment is a source of influence which directly promotes autonomous motivation for environment and perceived group's green climate and in turn, indirectly impacts OCBE. Accordingly, we can suggest following practical implications to corporate leaders and human resource managers who are keen to promote voluntary employee green behaviour.

In the perspective of developing leader's support for environment among group leaders, leader development programmes that focus on improving supportive behaviour for environment needs to be embedded into training and development calendars. Such programmes should specifically be aimed at group leader's environmental awareness, environmental competency, and attitude for supportive leadership since those affect the developing of leader's support for environment.

To foster leader's support for environment among group leaders, an organization needs to support environmental sustainability at the corporate level and clearly communicate their environmental expectations and support to group leaders. This communication can be done through environmental policy statements, environmental goal setting, funding environmental initiatives, behaving in environmental friendly way, making environmental sustainability a topic at higher level meetings, and participating in environmental campaigns organized by factories. In this regard, senior management should be cautious not to fall into greenwashing by just posting environmental policies and engaging in surface discussions on greening. Greenwashing can seriously damage group leader's support for environment and in turn reduce autonomous motivation for environment and perceived group's green climate of group members ultimately leading to poor OCBE at the workplace.

Considering that autonomous motivation for environment was found to be the strongest factor affecting OCBE of executive employees, the senior managers need to ensure practical measures to

develop autonomous motivation for environment of its employees in the endeavour of greening. In this regard, first, the recruitment and selection procedure of an organization needs to be aligned to filter out and hire individuals with high autonomous motivation for environment. The recruitment campaigns should regulate with the business strategy to incorporate and emphasize the greening as an essential part of the recruitment message. Further, it is recommended to incorporate autonomous motivation for environment as a selection criterion to be evaluated along with other requisite psychometric tests. Next, given that autonomous motivation for environment is a state-like phenomenon, it can be changed with proper interventions. Hence, the external behavioural regulations can be converted to self-determined through internalization [56]. Thus, apart from hiring high autonomous motivation for environment employees, autonomous motivation for environment of employees within the organization can be developed through improving leader's support for environment and by fostering environmental values. Clearly, when leader's support for environment is available, employees receive opportunities to display green behaviour. Consequently, individuals internalize the concept of greening and feel competent and free to display green behaviour. Thereafter, when employees value environment protection and preservation, their identified motivation for environment is high which leads to high tendency of engaging in OCBE [39]. Hence, the environmental values of employees can be advanced through developing environmental awareness. The procedure of filtering candidates who are high in autonomous motivation for environment during recruitment and promoting autonomous motivation for environment among existing employees may have an upward positive effect in the long run since work groups are resourced with high autonomous motivation for environment members and consequently it increases the ability to choose high autonomous motivation for environment leaders when promoting to supervisory and leadership positions.

Finally, it is also evident that the perceived group's green climate of a group member is an essential element in promoting OCBE among executive-level employees. To champion the perceived group's green climate, the group cohesiveness in greening can be enriched in several ways. First, the green training should be offered to the whole group in the same programme, rather than for selected group members. Second, the organizations can initiate and facilitate group led environmental programmes outside the organization. These interventions could lead to higher shared green learning and cohesiveness as a result of intimate interactions and finally resulting in promoting perceived group's green climate.

#### *5.4. Limitations and Future Research Directions*

Although this research yielded valuable contributions, it is not entirely free of limitations. First, the cross-sectional nature of the study limits the ability to establish cause and effect relationship among the studied variables. Future researchers are encouraged to pursue a longitudinal examination with multi-source data to establish the causality of the relationships in the current model. Further, causality may be established by pursuing quasi-experimental strategy which could enrich the findings. Second, the sample of current study is representative of a single industry from a developing country of South Asian region. For generalizability purposes, similar studies in other parts of the world and multiple industrial sectors are suggested. Third, in the present research model, we tested only two mediating variables between leader's support for environment and OCBE. Future researchers may extend the current knowledge by considering other possible moderating variables in the model. It will also be interesting to link the organizational level constructs such as organizational commitment to environment or environmental orientation as a possible influencing variable in the model to improve its explanatory power. Our study found support for the possible reciprocity from group towards the support of leader for environment, but future research investigations are needed to confirm this observation of how leader's support for environment fosters descriptive green group norms.

## 6. Conclusions

In the burgeoning research area of employee green behaviour at work, this study attempted to answer the research problem: How does leader's support for environment promote OCBE? In particular, based on social exchange theory, self-determination theory and theory of normative conduct, we developed a multi-mediator conceptual model that included perceived group's green climate and autonomous motivation for environment as mediators between leader's support for environment and OCBE. The results indicate that leader's support for environment, perceived group's green climate and autonomous motivation for environment directly impact OCBE and perceived group's green climate and autonomous motivation for environment partially mediate the relationship between leader's support for environment and OCBE of the executive level employees. Therefore, leader's support for environment was found to be a substantial sourcing factor in predicting perceived group's green climate, autonomous motivation for environment and OCBE. Moreover, perceived group's green climate and autonomous motivation for environment are also evident to be significant antecedents of OCBE. The direct influence of autonomous motivation for environment on OCBE was found to be higher than that of leader's support for environment and perceived group's green climate highlighting the value of individual motivation in determining OCBE. This investigation extends the employee green behaviour literature by bringing multi-theory perspective to explain the antecedents of OCBE and sheds new light in promoting OCBE in the venture of pursuing environmental sustainability goals of organizations.

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