

The Effects of Roles, Responsibility, and Social Norms on Pro-Environmental Behavior

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Abstract

Despite all efforts to limit climate change, not enough is being done to meet the goals of the Paris Agreement. More research should focus on understanding better what drives pro-environmental behavior (PEB). One of the main predictors of PEB is the feeling of perceived personal responsibility. It has been shown that responsibility varies between individuals and people belonging to organizations, but no research has investigated how the same people feel in their different roles – personal and organizational. Therefore, the present thesis fills this research gap, with the help of a survey containing an experimental manipulation. The results showed that individuals feel more responsible in their personal role than in their organizational role. In addition, descriptive social norms (what most people are perceived to do) and injunctive social norms (what most people are perceived to approve of) were hypothesized to predict responsibility, which in turn was used to predict behavior, proposing a mediation model. Mediation models using social norms together and separately were tested in both the personal and the organizational role. There was no consistent evidence showing support for any of the mediation models. Often this was due to the weak relationship between responsibility and the other two constructs. Future research should use more representative samples and focus on social norms, rather than on responsibility, when further investigating what predicts PEB.

Keywords: pro-environmental behavior, responsibility, social norms, personal role, organizational role

The Effects of Roles, Responsibility, and Social Norms on Pro-Environmental Behavior

Ever since the late 19th century, human activity, mostly through the emission of greenhouse gasses, has led to continuous increase of the global surface temperature (IPCC, 2023). This has led to numerous changes in the atmosphere, climate, oceans, biosphere, etc. (IPCC, 2023). An agreement was made in Paris in 2015 in order to bind nations to fight climate change together and hopefully reach the goal of the Intergovernmental Panel on Climate Change (IPCC) to limit global warming to 1.5°C by the end of this century. Unfortunately, according to the 2023 report of the IPCC, the current actions taken by governments, industries and consumers are not sufficient (IPCC, 2023). Hence, it is of great importance to investigate the different aspects of *pro-environmental behavior* (PEB). Through understanding PEB better, policies and campaigns can be made more effective than before.

One of the important factors influencing the decision to behave pro-environmentally is the feeling of *personal responsibility*. An early model including responsibility is the value-belief-norm (VBN) theory, proposed by Stern and colleagues (1999). They set out to explain common non-activist individual behaviors, which is why they divided PEBs into three types of behaviors that show support for pro-environmental movements – citizenship actions, policy support and acceptance, and personal sphere behaviors. Value-belief-norm theory posits that when individuals' values align with a certain movement and they believe both that the valued objects are threatened and that their actions can alleviate the threat, this leads to a feeling of personal responsibility to take action. Although VBN theory uses a number of different constructs, this feeling of responsibility appears to be the strongest predictor of PEB, and the only one that is connected to all three types of behaviors (Stern et al., 1999). Stern and colleagues (1999) provide definitions for two types of responsibility – the feeling that one's actions have an effect on the environment, and the feeling of obligation to take action. In this

thesis, these two constructs will be combined under the term “perceived personal responsibility”, or “responsibility” for short.

The relationship between perceived personal responsibility and PEB has been shown in more recent years as well. A meta-analysis by Klöckner (2013) failed to find support for the exact sequence of variables in VBN theory, but the relationship between responsibility and behavior was undeniable. In addition, Syropoulos and Markowitz (2022) found that this relationship is stable across individuals from different cultures. However, no existing literature investigates how the same individuals might feel and act in different contexts.

The effect of context is of particular interest, as individuals can have varying influences on the environment in their different roles (Hampton & Whitmarsh, 2023), such as travelers, shoppers, energy consumers, etc. In addition, different factors influence individuals in each role, with individual and social factors being the best predictors. Individual factors include psychological (e.g. values, personality traits) and demographic factors (e.g. education, belonging to certain groups), while social factors include social norms, social pressure, role models, and the availability of opportunities to act pro-environmentally. The roles and sets of behavior Hampton and Whitmarsh (2023) investigated were in six domains – food consumption, energy consumption, transport, shopping, citizenship, and influencing others. What is interesting is the fact that these roles and their related behaviors can be performed by the same individuals in different social contexts, such as personal context or within an organization. According to Buchanan and Russo (2015), although individuals ascribe responsibility to both themselves and other consumers, as well as the government and organizations, they believe that individual consumers are less responsible than big organizations. However, individuals believe they personally take significantly more action than other agents. Taken together, these findings lead one to wonder if one’s answers on questions about their environmental beliefs, responsibilities and behaviors would differ

depending on the role they focus on. If so, it is important to investigate what factors influence these behaviors and how they differ in the different roles, in order to generate successful strategies to prevent further climate change. Hence, this thesis will investigate how individuals feel and behave in two roles – personal and organizational, and answer the following question: In what role do individuals feel the most responsible to act pro-environmentally? Given the findings of Buchanan and Russo (2015), the first hypothesis of this thesis is that individuals will feel more responsible in their personal role than in their organizational role.

As previously mentioned, social factors such as social norms are a good predictor of PEB in various spheres (Hampton & Whitmarsh, 2023). It is important to make a distinction between descriptive and injunctive norms, as they can influence behavior both simultaneously and separately (Cialdini et al., 1990). Descriptive norms define what most people do, whereas injunctive norms are about what is morally approved of by most people. Both descriptive and injunctive norms are shown to predict PEB (Cialdini et al., 1990; Doherty & Webler, 2016). Interestingly, Doherty and Webler (2016) found that descriptive social norms were the best at predicting PEB, whereas a more recent review by Cialdini and Jacobson (2021) shows that the effect of injunctive norms can be seen the clearest.

Perhaps the difference in conclusions made by Cialdini and Jacobson (2021) and Doherty and Webler (2016) can be better understood by looking at the different contexts where social norms arise. In one's personal role, the social norms would be provided by e.g. close friends, family, roommates, while the norms in an organizational role will be set by the organization itself, as well as other members. As the personal context consists of different groups and individuals in a variety of different settings (e.g. at home, at restaurants, at the cinema), it seems plausible that it would be harder to make inferences about what is generally done by others. Indeed, Leoniak and Cwalina (2019) showed that conflicting cues seem to

undermine the normative influence of descriptive norms, leading Cialdini and Jacobson (2021) to conclude that injunctive norms are less sensitive to variations in the context. Hence, descriptive norms would probably have a lesser influence than injunctive norms in one's personal role, where situations seem to be more diverse. In contrast, the organizational context appears to be more stable, and with less variety in people, settings, and possible behaviors. This makes it easier to compare oneself to others, which has been shown to increase the influence of descriptive norms (Bergquist & Nilsson, 2018). Therefore, it seems plausible that individuals within an organization would be more influenced by seeing what others do around them, i.e. the descriptive norm.

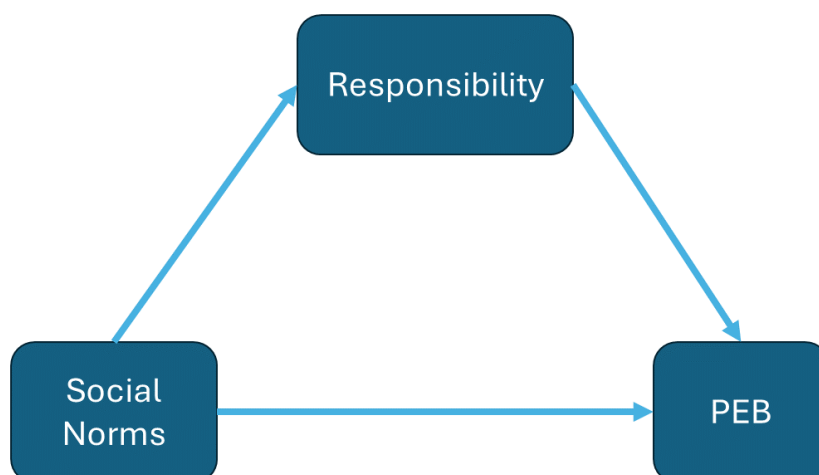
Seeing as both responsibility and social norms are good predictors of PEB, it would be interesting to see if they can be combined to predict behavior better. According to the norm taxonomy proposed by Thøgersen (2006), injunctive norms have an indirect effect on behavior through responsibility (called "personal norm" in the taxonomy). Muoro and Duarte (2021) further investigated if perceived personal responsibility in a work setting (termed "personal norm" in their paper) mediates the relationship between social norms and PEB. They found that injunctive social norms predict responsibility, which in turn predicts PEB. However, Muoro and Duarte (2021) did not test the relationship between descriptive norms and behavior for mediation by responsibility. As norms have the biggest effect on behavior when descriptive and injunctive norms are taken together (Cialdini & Jacobson, 2021), both descriptive and injunctive norms will be included in the analysis, together and separately. Thus, this thesis will build on the research by Muoro and Duarte (2021) by also measuring the constructs in participants' personal, as well as in their organizational role. The relationships between both descriptive and injunctive social norms and PEB will be tested for mediation by perceived personal responsibility in both roles.

Taking all aforementioned findings together, the second hypothesis of this thesis proposes a mediation model, shown in Figure 1, where descriptive and injunctive social norms combined predict responsibility, which in turn is expected to predict PEB in both roles (personal and organizational). The third hypothesis is that the type of role will act as a moderator when only one type of social norm is used as a predictor. In the organizational role, descriptive norms are expected to be a stronger indirect predictor of behavior through responsibility, while in the personal role, injunctive norms are expected to fit this mediation model better, being a better indirect predictor of PEB through responsibility.

To summarize, the following research will first investigate how responsible to act pro-environmentally individuals feel in their personal and in their organizational roles. Following Buchanan and Russo (2015), the first hypothesis of this thesis is that individuals will feel more responsible to engage in PEB in their personal role. Second, the influence of social norms on behavior will be tested for mediation by perceived responsibility in the two roles. In other words, hypothesis two is as follows: social norms in both roles will predict perceived personal responsibility, which in turn is expected to predict behavior. Both descriptive and

Figure 1

The Proposed Mediation Model



injunctive norms will be used, leading to hypothesis three, which is that in the organizational role descriptive norms will predict responsibility, which in turn will predict behavior better than injunctive norms, whereas in the personal role injunctive norms will be a better predictor than descriptive norms.

Methods

Participants and Design

Participants were students and other European citizens over the age of 18. The lead researcher conducted a power analysis for a one-sample paired t-test to compare whether responses from a personal role differ from responses from a professional role (two-sided). To detect a small effect size (0.3) with 80% power and 0.05 significance, a sample size of 90 respondents was needed. This power requirement was met, as a total of 125 individuals completed the questionnaire, comprising 66% women ($n = 82$), 32% men ($n = 40$), and 2% identifying as non-binary or preferring not to report gender ($n = 3$). Age distribution ranged from 18 to 81 with a mean age of 27. Predominantly, participants affiliated themselves with the education sector (49.6%, $n = 62$), while the remaining respondents represented diverse occupational backgrounds.

The design used for this research is a within-subject design and the data was collected through a survey. The survey featured an experimental manipulation - all participants saw all questions, but the order of the two main blocks was randomized. Hence, half of the participants saw the questions about their organizational role first and the questions about their personal role second, while the other half saw the questions about their personal role first and organizational role second.

Procedure

Participants were recruited in two ways. First, all researchers used snowballing by sending the link to the survey to university group chats, friends, family, and posting it on

social media (e.g. Instagram). The remaining participants were first-year students at the University of Groningen, who took part in the study for course credit. The University of Groningen ethics committee approved the study before distribution started. The survey was conducted through Qualtrics, in order to ensure full anonymity of the participants. After entering the survey and reading some information about it, participants were asked for their informed consent to take part in the study. Following was a control question assessing participants' belief in climate change, and then a short paragraph explaining what the personal and organizational roles entail. In order to avoid anchoring effects, participants were randomly assigned to either see the questions focusing on the personal or the organizational role first. The desired role was indicated above each question block with the terms "In your organization..." or "In your organizational role..." for the organizational role condition and "In your personal role..." for the personal role condition. Questions specifically focusing on either role were not shown twice, as they would have been irrelevant (e.g. a question about voting behavior would not fit in the organizational role condition). Questions examining values and identity were included outside of the blocks focusing on the two roles and therefore participants answered them only once.

Measures

As previously mentioned, the order of the blocks of questions about personal and organizational roles was randomized; however, the order of the questions within each block was kept the same for the sake of consistency. All the items were assessed with a Likert scale, which ranged from 1 (*Not at all* or *Strongly disagree*) to 7 (*To a great extent* or *Strongly agree*), except for the variables measuring personal behavior and advocacy behavior, which were assessed with a Likert scale ranging from 1 (*Never*) to 5 (*Many*). An attention check was included in the middle of the survey.

Demographics were assessed at the very end of the questionnaire. The only personal information collected was the age and gender of the participants. After that, three open-ended questions prompted the participants to answer what pro-environmental actions can be taken in their personal and organizational role and what they believe to be the main barriers in our society that need to be removed in order to achieve climate goals. Lastly, participants also had the opportunity to leave feedback for the researchers.

Dependent Variables

Perceived personal responsibility was measured by two identical questions in each condition ($r = .40$ in the personal role; $r = .46$ in the organizational role; “...to what extent are you responsible for causing/taking action to limit climate change?”).

Personal behavior was combined with advocacy behavior to create the dependent variable of behavior, indicating the participants’ level of PEB. Personal behavior was assessed by four items, all answering the same question (“Over the past 12 months, how often have you taken the following actions in your personal life/organization?”), each focusing on a specific type of behavior (energy consumption, food consumption, travelling, general consumption) that can be performed in both roles. The items measuring advocacy behavior were framed in the same way, four of which appeared in both the personal and organizational role conditions (“Signed a petition in support of limiting climate change”/“Boycotted companies that have a great impact on climate change”/“Urged friends or family/colleagues to take action to limit climate change”/“Advocated for climate actions in your social circle/organization”). As some advocacy behaviors are impossible to perform in organizational settings (“Voted for candidates that support actions on climate change”/“Joined public demonstrations or protests to urge governments and industries to take action to limit climate change”/“Donated money to an organization working on climate change”), they were only included in the personal role block. Therefore, advocacy behaviors were measured by seven items in the personal role

condition and only four items in the organizational role condition. When combined, the items for personal and advocacy behavior showed sufficient reliability ($\alpha = .85$ in the personal role; $\alpha = .78$ in the organizational role).

Social Norms

Descriptive and injunctive norms were measured separately. For descriptive norms, participants indicated how much they agree with four statements (*the people in my social circle/organization engage in...*). The behaviors listed were the same as the ones used for the personal behavior measure. For injunctive norms, participants indicated how much they agree with three statements (“*The people in my social circle/organization expect me to engage in pro-environmental behavior*”/“*I disappoint the people in my social circle/organization when I do not engage in pro-environmental behavior*”/“*It is important for my social circle/organization that I engage in pro-environmental behavior*”). These items were adapted from Muoro and Duarte (2021). For both norms, the responses to all items were combined into a single measure, which showed sufficient reliability (α varying from .76 to .89), with the exception of the measure for descriptive norms in the organizational role ($\alpha = .62$), which was lower than generally accepted.

Results

One hundred and thirty participants took part in the study. Two of them were excluded from the analysis, as they had refused to give their informed consent and were therefore led to the end of the questionnaire. Three participants failed the attention check and were also excluded from the analysis. Hence, the final number of participants was 125.

Descriptives

Table 1 shows all descriptive statistics. On average, participants felt more responsible in their personal role than in their organizational role. In the personal role, descriptive norms were measured to be more pro-environmental than injunctive norms. This was also the case

Table 1

Descriptive Statistics for Responsibility, Descriptive Social Norms, Injunctive Social Norms and Behavior in the Personal and Organizational Role

	Personal Role		Organizational Role	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Responsibility	3.9	1.2	3.5	1.3
Descriptive Norms	4.7	1.0	4.6	0.9
Injunctive Norms	4.0	1.3	3.9	1.3
Social Norms (combined)	4.4	1.0	4.3	1.0
Behavior	3.0	0.8	2.7	0.8

for the organizational role, although both descriptive and injunctive norms were seen as only slightly less pro-environmental than their counterparts in a personal context. On average, participants engaged in more PEB in their personal role than in their organizational role.

Assumption checks

The analysis comprised a paired samples t-test and a series of mediation analyses. For the paired samples t-test, the participants were independent from each other, and each participant answered the paired measurements. Although the scores measuring responsibility showed some skewness, the distribution was approximately normal. For the mediation analysis, the relationship between the independent variables and the mediators, the relationship between the independent variables and the dependent variables, as well as the relationship between the mediators and the dependent variables were all approximately linear. The models did not show a sign of strong multicollinearity and all variables were approximately normally distributed.

Analysis

The first research question investigated how responsible to act pro-environmentally individuals feel in their personal and organizational roles, with the hypothesis that individuals

will feel more responsible in their personal role. This was tested with a one-sided paired samples t-test, which showed a significant difference ($t(124) = 4.22, p < .001$, Cohen's $d = 0.38$) between the two roles, indicating support for the hypothesis that individuals feel more responsible in their personal role than in their organizational role.

The second research question focused on the relationship between social norms, responsibility, and behavior. The second hypothesis was that descriptive and injunctive social norms together will predict responsibility in both roles, and responsibility will predict behavior. Thus, a mediation analysis was performed. Table 2 shows the results of the mediation analyses in the two roles, with Figure 3 showing additional statistics. The

Table 2

Mediation Effects with Social Norms Combined in Both Roles

	Estimate	SE	z	p	95% Confidence Interval	
					Lower	Upper
Personal role						
Direct effects						
Social Norms → Behavior	0.46	0.08	5.886	<.001	0.30	0.61
Indirect effects						
Social Norms → Responsibility → Behavior	0.04	0.02	1.607	0.108	-0.01	0.09
Total effects						
Social Norms → Behavior	0.50	0.07	6.582	<.001	0.35	0.64
Organizational role						
Direct effects						
Social Norms → Behavior	0.39	0.09	4.243	<.001	0.21	0.57
Indirect effects						
Social Norms → Responsibility → Behavior	0.06	0.03	1.977	0.048	5.36×10^{-4}	0.12
Total effects						
Social Norms → Behavior	0.45	0.09	4.976	<.001	0.27	0.63

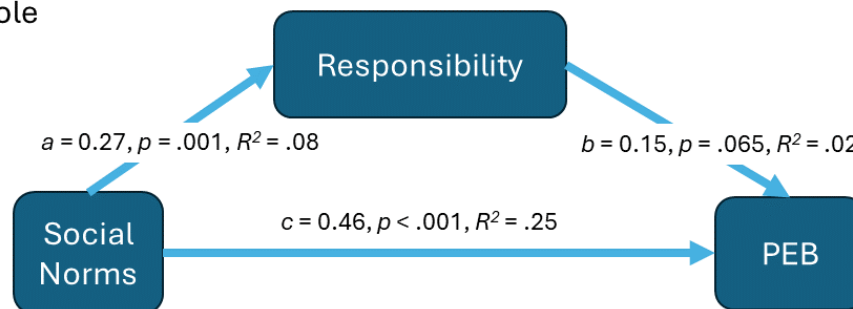
hypothesis was not confirmed in the personal role, as responsibility proved to be a poor predictor of behavior ($p = .065$), accounting for a small part of the variability ($R^2 = .02$).

The non-significant pathway from responsibility to behavior can also be seen in Figure 3, which shows the direct paths and their standardized coefficients in the two roles. In the organizational role, the model was supported, albeit barely. Responsibility again accounted for a small part of additional variability in behavior ($R^2 = .04$). Social norms together, however, predicted behavior well, accounting for 26% of variance in behavior in the personal role and 16% in the organizational role. This difference was also indicated by the pathway coefficients – although the mediation was not supported in the personal role, social norms were an overall better predictor of behavior in the personal role than in the organizational role.

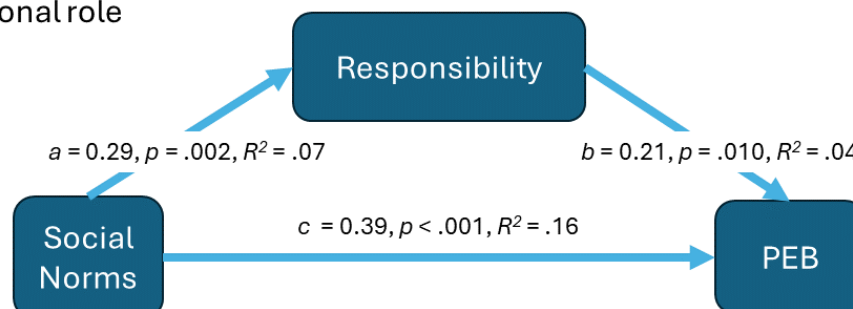
Figure 3

Standardized Path Coefficients, p-values and R-Squared in the Personal and Organizational Role, Using Social Norms Combined

A) Personal role



B) Organizational role



Interestingly, although social norms predicted responsibility significantly ($p = .001$ in the personal role and $p = .002$ in the organizational role), they did not account for a lot of the variance seen in responsibility ($R^2 = .08$ in the personal role and $R^2 = .07$ in the organizational role). This shows that there is little practical importance in this relationship and indicates that responsibility is a poor mediator of the relationship between social norms and behavior, likely due to its weak connection to both of them.

The third hypothesis of this thesis was similar to the second one but proposing more specific mediation models: four additional mediation models were tested, where injunctive norms were expected to predict responsibility and behavior better than descriptive norms in the personal role, while descriptive norms were expected to be a stronger predictor of responsibility (and therefore behavior) than injunctive norms in the organizational role.

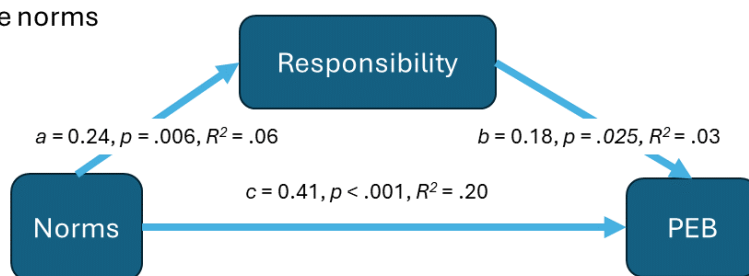
In the personal role, neither of the mediation models was supported. Table 3 shows the results from both analyses. For both norms, all pathways were significant, however, the direct relationship between social norms and behavior was stronger and more significant than the indirect relationship through responsibility. Looking at the path coefficients and additional statistics shown in Figure 4, the results are conflicting about which type of norms is a better predictor. Descriptive norms seem to have a slightly bigger influence than injunctive norms, although they explain almost the same amount of variance in behavior ($R^2 = .20$) as injunctive norms ($R^2 = .23$). In other words, no concrete evidence was found for the hypothesis that injunctive social norms are better than descriptive social norms in predicting responsibility and subsequent behavior in the personal role. On the contrary, there is weak indication that descriptive norms might have a bigger effect than injunctive norms (as can be seen by the path coefficients shown in Figure 4). However, this might be of little practical relevance, considering both types of norms explain similar amounts of variance.

Table 3*Mediation Effects with Injunctive and Descriptive Norms Separately in the Personal Role*

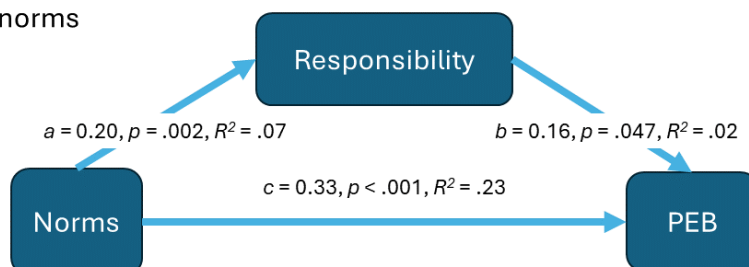
	Estimate	SE	z	p	95% Confidence Interval	
					Lower	Upper
Descriptive Norms						
Direct effects						
Descriptive Norms → Behavior	0.409	0.083	4.947	<.001	0.247	0.571
Indirect effects						
Descriptive Norms → Responsibility → Behavior	0.044	0.025	1.736	0.083	-0.006	0.094
Total effects						
Descriptive Norms → Behavior	0.453	0.082	5.532	<.001	0.293	0.614
Injunctive Norms						
Direct effects						
Injunctive Norms → Behavior	0.326	0.061	5.380	<.001	0.207	0.445
Indirect effects						
Injunctive Norms → Responsibility → Behavior	0.033	0.019	1.680	0.093	-0.005	0.071
Total effects						
Injunctive Norms → Behavior	0.359	0.059	6.052	<.001	0.243	0.475

Figure 4*Standardized Path Coefficients, p-values, and R-Squared in the Personal Role, Using Descriptive and Injunctive Norms separately*

A) Descriptive norms



B) Injunctive norms



In the organizational role, the mediation model was again unsupported when descriptive social norms were used, which can be seen in Table 4. Figure 5 shows the direct pathways and additional statistics. Unlike any of the previous models, descriptive norms predicted responsibility quite poorly ($p = .270$), accounting for only 1% of its variance. However, responsibility was a surprisingly good predictor of behavior ($p < .001$), although it did not account for a lot of variance ($R^2 = .08$). When injunctive norms were used, the mediation hypothesis received weak support ($p = .042$). There was a small difference between the variance explained directly by injunctive norms ($R^2 = .14$) and descriptive norms ($R^2 = .09$). The model pathways shown in Figure 5 show a weak indication that descriptive norms have a bigger influence on behavior when used directly; however, when looking at the

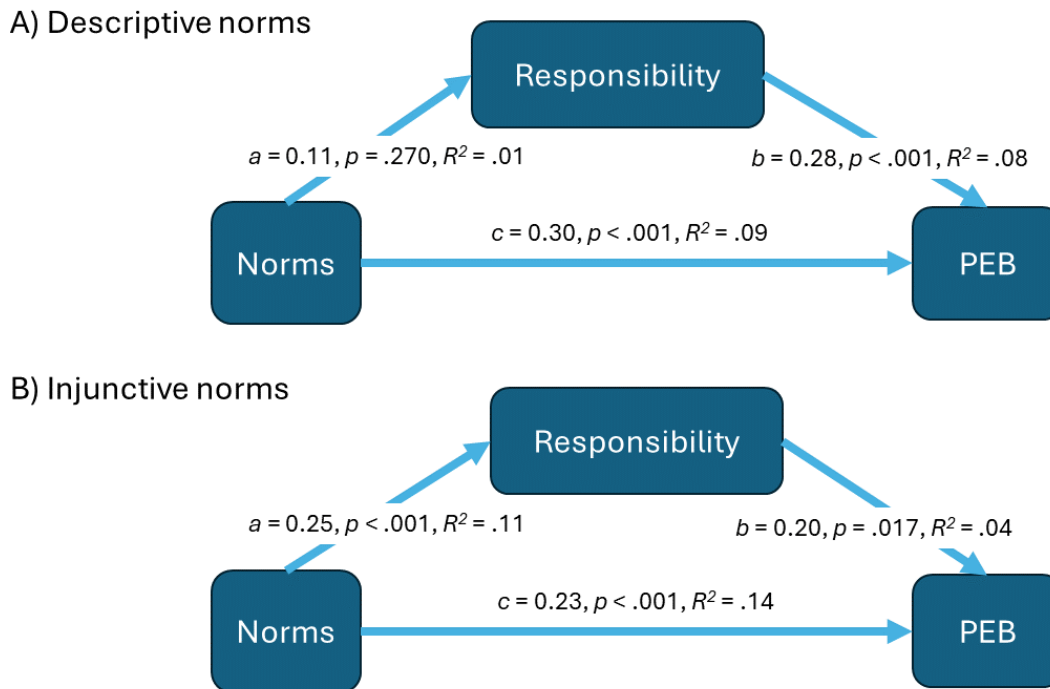
Table 4

Mediation Effects with Injunctive and Descriptive Norms Separately in the Organizational Role

	Estimate	SE	z	p	95% Confidence Interval	
					Lower	Upper
Direct effects						
Descriptive Norms → Behavior	0.301	0.089	3.358	<.001	0.125	0.476
Indirect effects						
Descriptive Norms → Responsibility → Behavior	0.030	0.029	1.050	0.294	-0.026	0.086
Total effects						
Descriptive Norms → Behavior	0.330	0.093	3.550	<.001	0.148	0.513
Direct effects						
Injunctive Norms → Behavior	0.233	0.066	3.532	<.001	0.104	0.362
Indirect effects						
Injunctive Norms → Responsibility → Behavior	0.052	0.026	2.037	0.042	0.002	0.102
Total effects						
Injunctive Norms → Behavior	0.285	0.063	4.488	<.001	0.160	0.409

Figure 5

Standardized Path Coefficients, p-values, and R-Squared in the Organizational Role, Using Descriptive and Injunctive Norms Separately



relationship through responsibility, the path coefficients indicate a stronger relationship between injunctive norms and behavior. This evidence is rather conflicting and therefore no final conclusions can be drawn. Thus, the hypothesis that descriptive norms would be a better predictor of behavior in an organizational context was not supported.

Discussion

The results of this study showed support for the hypothesis that individuals feel more responsible to behave pro-environmentally in their personal role than in their organizational role. There was no reliable support for the hypothesis that responsibility mediates the relationship between descriptive and injunctive social norms (both together and separately) in either of the investigated contexts. On the contrary, responsibility appears to only be loosely connected to social norms and behavior, and social norms are generally better in predicting behavior on their own.

This thesis investigated the relationships between different contexts (personal and organizational), the feeling of personal responsibility and social norms and their effects on pro-environmental behavior (PEB). Following Value-Behavior-Norm (VBN) theory (Stern et al., 1990), responsibility is an important factor in predicting PEB, but according to Buchanan and Russo (2015), responsibility varies between roles – individuals feel more responsible than people belonging to organizations. However, no known research investigates how the same people would feel and act in these two different roles. Taking the findings of Buchanan and Russo (2015), a hypothesis was formed that individuals would feel more responsible to act pro-environmentally in their personal role than in their organizational role. A sample of 125 participants answered the same questions about how responsible they feel in their two roles, providing supporting evidence for the hypothesis – participants indeed felt more responsibility to perform PEBs in their personal role, as compared to their organizational role.

In addition to responsibility, social norms, namely the perceptions of how common and approved a behavior is, were used to predict PEB. Muoro and Duarte (2021) found that in an organizational context, injunctive norms predict responsibility, which in turn predicts PEB, and therefore creating a mediation model. Building on this finding, the relationships between both descriptive and injunctive norms (together and separately) and behavior were tested for mediation by responsibility in both the personal and the organizational role. In other words, the second hypothesis of this thesis was that injunctive and descriptive social norms combined would predict responsibility in both roles, which in turn would predict PEB. Surprisingly, no conclusive evidence was found that such a mediation effect occurs in any of the performed analyses. In general, participants who perceived PEB in either of their roles to be either common, approved, or both also felt more responsible to perform PEB themselves. However, this feeling of responsibility was not reliably related to actually performing such behaviors,

which goes against a number of previous findings (e.g. Klöckner, 2013; Stern et al., 1990; Syropoulos & Markowitz, 2022).

Due to the different characteristics of the two roles that were investigated, a third hypothesis, similar to the second one, was formed, specifying which type of social norms would have a larger effect, depending on the role they are observed in. The personal role was hypothesized to be the source of conflicting normative cues, which are known to undermine the influence of descriptive norms (Leoniak & Cwalina, 2019), while the organizational role was expected to be more structured and with opportunities to compare oneself to others, which increases the influence of descriptive norms (Bergquist & Nilsson, 2018). Therefore, the third hypothesis of this thesis was that injunctive norms would be a better predictor of responsibility and therefore behavior than descriptive norms in the personal role, while descriptive norms were expected to be a better predictor than injunctive norms in the organizational role. As previously mentioned, the mediation model received no reliable support. However, the observed differences in the explained variance by the two types of norms were very slim in all of the proposed models. Regardless of whether a behavior was perceived to be common or simply approved by others, participants felt similarly responsible to act and performed comparable amounts of PEB. In addition, social norms were better at explaining behavior when they were used together, rather than separately. This can be related to previous research showing that social norms have the biggest effect on behavior when they align and are used together (e.g. Schultz & Zaleski, 2008).

Limitations

There is a number of possible reasons why a lot of the evidence described in this thesis is inconclusive. The first limitation is the sample of participants – the majority of them were students. In order to be able to include as many participants as possible through snowballing, the definition of “organizational role” was expanded to include university settings, instead of

only including workplace roles. This likely made answering the questions about participants' organizational role harder, as a university is a lot bigger than the average company one might work in. It is possible this is the reason why the measure for descriptive norms in an organization showed low reliability. In addition, participants' social circle at university and in their personal life is more likely to overlap than if they had had a workplace in mind instead. Thus, this might have made their answers in the two roles more similar than they ought to be, leading to bias.

An important note about the recruited participants is that university students rarely take high positions in companies. On the contrary, they often work jobs such as waiter, bartender, barista, etc., which are less common in the adult population post-university. This likely made the sample more homogeneous than a representative sample. Furthermore, asking participants about the positions they hold in organizations could have provided useful insight. People in higher positions (and therefore, with higher socioeconomic statuses) contribute more to climate change than people with lower statuses (Nielsen et al., 2021).

Another limitation of this study is that all types of behaviors were combined into a general behavior measure, instead of examining each type separately. According to Yuriev et al. (2020), it is best to study only one type of specific behavior. Although this statement is about the Theory of Planned Behavior (TPB, Ajzen, 1991), it is possible the model proposed in this thesis would have explained more variance if the outcome variable was based on a single behavior.

Lastly, the results regarding the different mediation analyses proposed in this thesis were especially inconclusive, often due to the fact that responsibility was a weak predictor of behavior. It is possible this is due to the specific sequence of the variables used in the mediation. For example, VBN theory (Stern et al., 1999) includes constructs that are defined in the same way as responsibility and injunctive norms are defined in this thesis. However,

when compared to the research by Muoro and Duarte (2021), which was used as a basis for the mediation, the sequence of these variables in VBN is different. In VBN theory, Stern et al. (1999) suggest that responsibility predicts injunctive norms, which predict behavior, while Muoro and Duarte (2021) show that injunctive norms predict responsibility, which predicts behavior. It is possible that Muoro and Duarte (2021) found this relationship due to the close definitions of responsibility and injunctive norms in the organizational role, while the sequence suggested by VBN theory is the one that would be generally applicable.

Future Research and Practical Implications

As previously mentioned, most of the findings were inconclusive. Based on the limitations of this study, it is advisable that future research is conducted with a more carefully selected sample – e.g. excluding university settings and focusing on workplaces. In addition, it would be interesting to see the connection between socio-economic status and perceived responsibility both in people's personal and organizational role. However, since social norms proved to be a better predictor of behavior than responsibility, more attention should be given to investigating how they vary in different roles and hopefully how they can be changed in order to promote PEB. Following previous research (e.g. Schultz & Zaleski, 2008), it would be best to employ both types of social norms together. Although they explained a lot of the variance in PEB, social norms still had a lesser effect in the organizational role than in the personal role. Hence, although social context is clearly important, there must be other factors explaining PEB in the organizational role specifically, which should be investigated further.

Conclusion

In short, this research showed that responsibility varies between people's personal and organizational roles. A mediation model was proposed where social norms predict responsibility, which in turn predicts behavior. This model was not supported, as responsibility only showed a weak connection to both social norms and behavior, accounting

for little variance in PEB. However, both descriptive and injunctive social norms were reliable predictors of PEB. As most of the results of this thesis were inconclusive, more research is needed to better understand the influence responsibility and social norms have on PEB in the different roles individuals can take when addressing climate change.

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