The legitimisation of local environmental organisations by community members

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Abstract

Although environmental activists play an important role in addressing local environmental injustices, they find it difficult to legitimise their activities. They are frequently challenged by political and business forces on the grounds that they are raising barriers to local economic development and are often regarded as irrational or hysterical. In this study we analyse the legitimacy conferred on local environmental organisations by residents living near a polluting industrial site. Considering an individual's judgement of legitimacy as an attitude and drawing on the social psychological and risk-benefit analysis literatures, we define a model that explains how individuals' beliefs and perceptions about local environmental organisations and their context (in terms of the local industry risk-benefit controversy), together with personal environmental beliefs, influence their assessments of legitimacy. Results show that individuals' legitimacy judgements of local environmental organisations are directly influenced by beliefs about their credibility and the risk perceptions associated with the industrial area, and indirectly affected by personal environmental beliefs.

Keywords: legitimacy, environmental movements, environmental activism, risk-benefit analysis, credibility, environmental beliefs, local communities.

Introduction

One strand in the literature on interaction between business and non-governmental organisations (NGOs) deals with large multinational corporations that operate in multiple locations and generate negative externalities on an international scale (e.g., MacKay and Munro, 2012; de Lange et al., 2016). However, a great deal of activism takes place at the local level, particularly on environmental issues (Grant and Vasi, 2017; Lacey-Barnacle, 2022; Rootes, 2007). As Grant and Vasi (2017, p. 100) point out, "the strong local orientation of many activists reflects the specific environmental damages that companies cause to specific geographical areas in the form of toxic dumping, destruction of lands and resources, and air pollution". Local environmental activism campaigns are typically conducted with modest resources and limited capacity to influence, and frequently find it difficult to gain legitimacy and make their voices heard. Such activism is often perceived as reactive, in that it seeks to question the status quo, and is frequently challenged by political and business interests on the grounds that it raises barriers to the economic development of the region (Rootes, 2013). Furthermore, local environmental activists that denounce environmental risks are often regarded as irrational or hysterical (Berry, 2003; Kroll-Smith and Couch, 1991).

Although local environmental activism has gained prominence in the last decades (e.g., Andrew and Edwards, 2005; Grant and Vasi, 2017; Lacey-Barnacle, 2022; Mihaylov and Perkins, 2015; Rootes, 2007, 2013), it has aroused little interest in the business and society literature, which has paid more attention, from a managerial perspective, to actors with greater capacity to influence firm decisions. However, local environmental organisations (LEO) can become key actors at the local level, contributing to maintain plurality in public discourse, which makes their relevance and acceptance a necessary subject for analysis. In line with works such as Andrews and Edwards

(2005) or Eimhjellen (2014), the term environmental organisations is used here in a broad sense to include different types of organisations or groups[1] regardless of their size, strategy, degree of professionalisation, ideological orientation or organisational form (in terms of membership and participation structures, etc.). LEOs are regarded as agents of social transformation that challenge corporate abuse or malpractice in certain locations, and as such, to a certain extent they act as promoters of the 'community interest'. However, supposedly acting on behalf of the community does not necessarily imply direct legitimacy; it is therefore important to determine the factors that influence the legitimacy of these organisations.

Despite the extensive research on how organisations acquire and manage legitimacy, less attention has been paid to those who grant this legitimacy, which constitutes a major gap in the literature (Bitektine, 2011; Deephouse et al., 2017; Tost, 2011). Molden et al. (2017), drawing on Lister (2003), state that the literature on NGO legitimacy often fails to specify the target of their legitimacy, that is, for whom NGOs must establish this legitimacy, although national and global funders, as well as corporate and governmental agents, usually take priority over local communities. However, the "consent or representation of those involved or affected" (Vedder, 2007, p. 7) is a key factor in determining legitimacy; thus, when dealing with environmental issues in the context of a specific place, the local community becomes particularly relevant in determining the legitimacy of LEOs. Support of community members is the most important resource that these organisations try to mobilise in their efforts to overcome the interests of powerful actors (Stern et al., 1999). In fact, LEOs claim to represent communities of place; consequently, the current study focuses on members of these communities. We approach legitimacy from the individual's

[1]Several studies (e.g., Kassinis and Vafeas, 2006; Lannelongue and González-Benito, 2012; or Leyshon et al., 2021) deal with 'environmental groups and organisations' under the same heading. In any case, any nuances that might be established between the two concepts are not relevant for the purposes of the present study (the individuals' legitimation of the subject).

perspective, which is a micro-level approach that considers an individual's legitimacy judgement as an attitude (Finch et al., 2015; Jahn et al., 2020). By taking this approach, we also respond calls from several authors (e.g., Bitektine, 2011; Chung et al., 2016; Deephouse et al., 2017 and Tost, 2011) for greater research attention to how individuals judge legitimacy.

Focusing on local community members as a key source of LEOs' legitimacy, we combine risk-benefit analysis (Siegrist et al., 2000) with the social psychological literature (Fishbein and Ajzen, 1975; 2010; Ajzen, 1985; 1991) to define a model that explains how individuals' beliefs and perceptions about LEOs and their context, as well as personal environmental beliefs, influence their assessments of legitimacy. These three factors operate at three different levels: contextual level (perception of the factors that characterise the controversy of the local industrial activity, in terms of risk-benefit); LEO level (beliefs about the credibility of these organisations); individual level (personal environmental beliefs). All three factors are key to explaining the legitimacy of the LEOs. First, given that organisations are perceived as legitimate when they play a role that society needs (Ruef and Scott, 1998), the contextual factors that characterise the local environmental controversy should help to explain variations in individuals' legitimacy judgements of LEOs. However, although these factors can justify the need and usefulness of LEOs, they do not confer them the credibility they require. Credibility is considered a key factor in the legitimacy of any organisation (Bachmann and Ingenhoff, 2017; Finch et al., 2015; Jahn et al., 2020), and it is especially relevant in the case of LEOs, which, as mentioned above, have limited resources and are often regarded as irrational. Finally, and taking into account the micro-level approach used in this study –individuals' judgements of legitimacy– we consider it relevant to consider the individual's environmental beliefs. As environmental beliefs contribute to explaining variations in environmental attitudes (Stern et al., 1995a), they may influence the residents' legitimacy

judgements of LEOs because these organisations emerge with the purpose of combating environmental problems at the local level. Hypotheses are tested on a sample of 390 individuals residing in the vicinity of a petrochemical complex in Spain. Through this analysis, the research contributes to the literature on LEOs by furthering our understanding of how these organisations are legitimated by local community members, the very citizens these organisations purport to defend by acting in the 'community interest'. Local communities are key actors when it comes to granting legitimacy to LEOs, but to date they have received little attention in the academic literature.

The remainder of the article is structured as follows. In the next section we present the theoretical background and the hypotheses of the model. The methodology is then explained, followed by the analysis of the results. The final section reports the discussion and main conclusions.

Theoretical background and hypotheses

Legitimacy has deep roots in the organisational literature, particularly in the institutional theory (Meyer and Rowan, 1977; Suchman, 1995). Legitimacy is important insofar as it has consequences for organisations. In order to survive, it is understood that organisations must try to adjust to the regulative, cultural-cognitive and normative elements of their institutional environment (Scott, 1995). Thus, organisation survival requires social acceptance or legitimacy as well as economic success. Furthermore, legitimacy matters because most stakeholders are only willing to engage with legitimate organisations (Deephouse et al., 2017). Based on the most influential concept proposed in the literature to date, legitimacy is defined as "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs and definitions" (Suchman, 1995, p. 574). As this author also

points out, legitimacy is a matter of social acceptance of a subject (a feeling of acceptance by its social system).

Previous research in the field of organisational legitimacy has focused mainly on how organisations, including NGOs, gain, manage and use legitimacy, whereas less attention has been paid to those who grant this legitimacy (Bitekine, 2011; Deephouse et al., 2017; Tost, 2011). Furthermore, research has focused primarily on legitimacy granted by sources at a collective level of analysis (Deephouse et al., 2017). In general, few empirical studies have examined organisational legitimacy from the individual's perspective, namely a micro-level approach. Although legitimacy is a 'generalised' collective phenomenon, it is composed of subjective legitimacy judgements of individual actors (Bitektine and Haack, 2015). As Tost (2011, p. 686) note, "an understanding of the micro-level dynamics of legitimacy judgments is crucial because individuals' judgments and perceptions constitute the 'micro-motor' that guides their behavior, thereby influencing interactions among individuals, which, in turn, coalesce to constitute collective-level legitimacy and social reality". It is individuals who perceive, evaluate, and make judgements (Bitektine and Haack, 2015).

Authors such as Lister (2003) or Molden et al. (2017) note that the literature on NGOs has often failed to specify the target of their legitimacy, that is, for whom these organisations must establish this legitimacy. The proper delimitation of the key actors that confer legitimacy on a specific organisation (its 'sources of legitimacy') is a relevant issue, considering that not every stakeholder (and the legitimacy granted by it) may be of the same importance to an organisation (Lister, 2003). Moreover, as this author also points out, the factors that influence the legitimacy of an organisation may vary depending on the stakeholder considered, because each of them evaluates the organisation and its context from a different perspective. National and global funders, as well as

corporate and governmental agents, have usually taken priority over the local communities when determining who should grant legitimacy to NGOs; in the case of companies and states, the legitimacy of NGOs has grown in importance as a result of their participation in partnerships or multi-stakeholder government schemes (e.g. Gritten and Saastamoinen, 2010; Baur and Palazzo, 2011; Botetzaigas and Koutiva, 2014; Chen et al., 2019; Thomas, 2020). In the context of local environmental struggles members of the local community play a crucial role in granting LEOs legitimacy, considering that these are the people the LEOs claim to represent. As Stern et al. (1999) note, mobilising the support of community members is the first priority for LEOs in their struggles against the most powerful actors over local environmental issues. Although research has addressed the matter of local activism and environmental organisations (e.g., Andrew and Edwards, 2005; Lacey-Barnacle, 2022), the issue of their legitimacy has been understudied. By focusing on members of local communities and their legitimacy judgements on LEOs, first, our study responds to calls to approach legitimacy from the perspective of the individual (Bitektine, 2011; Tost, 2011; Deephouse et al., 2017) and second, it advances the study of the factors which influence the legitimacy that local community members grant to LEOs.

Legitimacy as an attitude and the role of individual perceptions and beliefs as precursors

In this research we draw on the studies of Finch et al. (2015) and Jahn et al. (2020), which consider an individual's legitimacy judgement as an attitude. Judging something as legitimate is equivalent to accepting it,[2] which translates into a favourable attitude towards it. Judgements of legitimacy, as an attitude, are influenced by individuals' beliefs and perceptions. According to the theory of

[2] According to Suddaby et al. (2017: p. 464), "At the individual level, legitimacy is present as propriety judgment (…) or an evaluator's assessment of the appropriateness or acceptability of a legitimacy object".

reasoned action (Fishbein and Ajzen, 1975) and the theory of planned behaviour (Ajzen, 1985; 1991), beliefs are a precursor to attitudes –beliefs about a specific object (an organisation, an industry, etc.) lead to attitudes about this object, an extraordinarily influential relationship in social psychological research. Furthermore, we also based our analysis on the literature on risk-benefit analysis, which has shown how perceived risks and benefits determine attitudes, in terms of acceptance of a technology, organisation or industry (e.g., Kriesky et al., 2013; De Groot et al.; 2013; 2020; Akin et al., 2019; Lee, 2020). As De Groot et al. (2020, p. 1227) noted, "Attitudes are psychological tendencies to evaluate an attitude object (i.e., energy technology) through weighting the costs (or 'risks') and benefits of a specific object or behaviour (Ajzen, 1985)". Specifically, individuals who perceive higher benefits and lower risks of an object will tend to show supportive attitudes towards it. On the contrary, the perception of higher risks and lower benefits will reduce supportive attitudes to the object, while facilitating the acceptance of alternative options that make change possible.

Hypothesis development

Through this study we attempt to shed light on why some members of the local community come to view LEOs favourably while others hold negative views on them. More specifically, as we noted in the previous sections, our purpose is to analyse how an individual's legitimacy judgement may be influenced by their beliefs and perceptions taking into account the following three factors (at three levels): the contextual factors that characterise the controversy of the local industrial activity (perceived impacts in terms of risk-benefit), beliefs about the credibility of the LEOs, and personal environmental beliefs.

Perceived impacts of the local industrial activity –risk and economic benefits– and legitimacy

Organisations are perceived as legitimate when they fill a role that society needs (Ruef and Scott 1998). In this regard, the legitimacy of LEOs is determined by whether they are needed or how they are justified in light of the environmental issues that directly impact the local community. Although the activity of a controversial industry such as the petrochemical is polluting *per se* –this industry is a source of toxic pollutants with mutagenic and carcinogenic properties (Jephote et al., 2020), its perceived impacts and the business–local community relationship might vary according to each particular case (López-Navarro et al., 2018; Verbeek, 2020), so that the formation of LEOs may be perceived and, consequently, accepted by local community members in different ways.

According to Otway and Pahner (1976), the perception of risks is a key factor in forming attitudes because "people respond to a threatening situation based upon what they perceive it to be" (p. 131). Furthermore, environmental risks interact with economic benefits in citizens' evaluations of an industry's activity (Atari et al., 2011; López-Navarro et al., 2018). In fact, the discussion about whether a project is fair refers to whether the benefits it provides to the local community outweigh the negative environmental conditions it represents. Local communities are concerned about the environmental impacts of the industry and the resulting health risks, but at the same time they depend on the jobs it provides.

In accordance with the above, individuals who identify a higher risk scenario –which may be associated, for example, with poor industry environmental performance or poor monitoring by public institutions– may show a lower acceptance of the industry and, in parallel, a greater acceptance of the LEOs because of their role in pressurising industry and public institutions to improve firms' environmental behaviour. In this way, when an industrial site is perceived as higher risk, members of local communities would perceive LEOs as more necessary, which in turn would

strengthen their legitimacy. On the other hand, individuals who perceive greater economic benefits associated with the industrial activity may show a greater acceptance of the industry and, in parallel, a lower acceptance of LEOs because their actions may curb industrial development, thus limiting the potential benefits it could bring to the future of the region. As a result, we propose the following two hypotheses:

H1: There is a positive relationship between an individual's perception of industrial activity risks and their legitimacy judgements of LEOs.

H2: There is a negative relationship between an individual's perception of industrial activity benefits and their legitimacy judgements of LEOs.

Beliefs about the credibility of LEOs and legitimacy

Credibility has been viewed as a belief that can influence the formation of individual attitudes (Chaiken and Maheswaran, 1994; Goldsmith et al., 2000). Although credibility has traditionally been considered as a two-dimensional construct formed by trustworthiness and expertise (Hovland et al., 1953; Newell and Goldsmith, 2001), previous research has considered the former as the dominant dimension (Jahn et al., 2020). Expertise denotes "how competent and capable is the company in making and delivering the products they advertise'', while trustworthiness refers to the extent that "the company can be relied upon'' (Newell and Glodsmith, 2011, p. 238).

In our case study, addressing the issue of the credibility of LEOs posed a particular challenge. As will be explained in the methodology section, actions from the LEO of reference in our research were based on studies that, although promoted by this organisation, were carried out by a scientific university laboratory. Consequently, the expertise –the organisation's relevant knowledge of an

issue– derived more from the university laboratory than from the LEO's own expertise. This organisation campaigned to disseminate the results of the studies, sometimes accompanied by the head of the scientific university laboratory that carried them out, with the aim of raising public awareness of air quality problems and the associated risks. In light of this circumstance, in this study we focus exclusively on the trustworthiness dimension when characterising the LEOs' credibility.

A source's credibility influences the acceptance or rejection of its suggestions (Suzuki, 1978). Therefore, credibility plays a key role in the legitimacy processes of any organisation. Previous research has corroborated a positive relationship between the two variables in the case of industries (Finch et al., 2015) and companies (Jahn et al., 2020; O'Neill et al., 2022). Furthermore, the issue of credibility is especially relevant in the case of LEOs. These organisations need to gain credibility to be accepted, because they have often been labelled as irrational or hysterical by firms, industry groups or government agencies (Berry, 2003; Kroll-Smith and Couch, 1991). In light of the above, we propose the following hypothesis:

H3: There is a positive relationship between the individual's belief in the credibility of the LEOs and their legitimacy judgements.

Environmental personal beliefs and legitimacy

Some research in the social psychological literature has shown the influence of individuals' environmental values and belief systems on attitudes (Milfont et al., 2010; Stern et al., 1995a). In the frame of the new ecological paradigm (NEP), individuals' environmental beliefs are about how humanity relates with nature (Dunlap et al., 2000). According to these authors, NEP items

"primarily tap 'primitive beliefs' about the nature of the earth and humanity's relationship with it" (p. 427).

Environmental beliefs contribute to explain variations in environmental attitudes (Stern et al., 1995a). People with high environmental beliefs understand the word in ecological terms. Thus, a person with high environmental beliefs prioritises aspects based on the environmental ecosystem, rather than on self-interests (Wang et al., 2020), generating positive attitudes towards pro-environmental organisations, cleaner technologies, and so forth. Some previous studies have empirically addressed how environmental values and beliefs influence attitudes (e.g., Chung and Kim, 2018; Wang et al., 2020). Drawing on these authors' arguments, individuals with stronger personal beliefs in the environmental field, and consequently greater awareness of environmental problems, are more likely to regard the goals and claims of LEOs as justified and legitimate. Thus, they should grant greater legitimacy to LEOs in their role of defending the environmental interests of the local community. This leads us to propose the following hypothesis:

> *H4. There is a positive relationship between the individual's environmental beliefs and their legitimacy judgements of LEOs.*

Environmental personal beliefs and beliefs about the credibility of LEOs

Individual beliefs are hierarchically organised, forming an individual's belief system (Feather, 1995). Stern et al. (1995b) distinguish between general and specific beliefs. These authors equate general beliefs with worldviews, while explicitly pointing out that worldviews are causal antecedents of specific beliefs –beliefs about specific environmental problems. Personal environmental beliefs are general in nature; they would affect the attitudes and behaviours of individuals on any environmental issue. Specific beliefs, meanwhile, refer to how individuals

understand the characteristics of a specific subject. As a higher order belief, general beliefs should influence specific beliefs. For example, the study of Corral-Verdugo et al. (2003) showed how general environmental beliefs affected the specific beliefs about the use of water. Drawing on these arguments, personal environmental beliefs (general beliefs) would influence beliefs about the credibility of LEOs (specific beliefs). Taking into account that LEOs campaign for greater environmental responsibility from the industry, it can be assumed that high personal environmental beliefs should positively affect the credibility that an individual grants to such organisations. This leads us to hypothesise that:

> *H5: There is a positive relationship between the individual's environmental beliefs and their belief in the credibility of the LEOs.*

Environmental personal beliefs and perceived impacts of the industrial activity

Furthermore, personal environmental beliefs can also affect perceptions about the impacts of the industrial activity. As De Groot et al. (2013) note, people's general worldviews –the NEP represents beliefs about the Earth and human–environment relationships– influence their perception of risks and benefits. Previous studies, such as the work of Slimak and Dietz (2006), showed that specific ecological risk perception is positively affected by values and general beliefs about the environment. These authors point out that the general beliefs, such as environmental beliefs, "act as a filter on the plausibility of new information regarding environmental threats" (p. 1691). Values and beliefs act as filters or amplifiers when it comes to interpreting information about environmental risks, so that people with strong environmental beliefs –those who are concerned about environmental vulnerability– will tend to perceive higher risks. On the other hand, and taking into account that personal environmental beliefs emphasise the relevance of the

biosphere to material issues, it can be expected that individuals with high environmental beliefs place lower value on the economic benefits from industrial activity, especially in the case of controversial industries like petrochemicals. Accordingly, we propose our last two hypotheses:

H6: There is a positive relationship between the individual's environmental beliefs and their perception of industrial activity risks.

H7: There is a negative relationship between the individual's environmental beliefs and their perception of industrial activity benefits.

Figure 1 shows the research model with all the proposed hypotheses.

Insert figure 1 about here

Methodology

Scope of the Study

The industrial site and the local environment activism

Tarragona (Spain) is the site of one of the largest petrochemical complexes in southern Europe. The complex is located on two sites ten kilometres apart: the southern industrial complex and the northern industrial complex. In the last decade, the activity of local environmental activism in the area under study has largely been led by the LEO 'Cel Net' (Clean Sky). To date, this LEO has

centred its activities on the northern site (Figure 2), where companies such as Repsol and Dow Chemical are located. In 2014 Cel Net gained influence after publishing the results of a scientific study into air quality in the area of the northern site. The study, promoted by this environmental organisation, was carried out by the Environment Centre Laboratory (Laboratori del Centre de Medi Ambient, LCMA) at the Polytechnic University of Catalonia (UPC) and financed by several town councils of the municipalities closest to the petrochemical complex. Members of the LEO and volunteers from the municipalities involved participated in the social and chemical control activities for the study.

Insert figure 2 here

Data collection

The fieldwork for our study consisted of personal interviews with residents in the three localities (El Morell, La Pobla de Mafumet and Perafort-Puigdelfí) closest to the northern industrial complex. These localities were chosen because they receive the greatest impact of both positive and negative externalities generated by the activity of the firms in the complex. Before the fieldwork began, a pilot survey was carried out in July 2018, in which 40 residents from these localities completed the initial version of the questionnaire; the participants were not included in the sample for the subsequent survey. The purpose of the pilot survey was to adapt the scales to the reality of the study context, to assess the quality of the items, to improve their wording or

readability, and to obtain direct qualitative information from residents on the subjects covered in the research. Initially, our purpose was to analyse the legitimacy of Cel Net, which, as mentioned above, was at the forefront of the local environmental movement. The survey specifically asked about this organisation. However, the pre-test revealed that although they were aware of local campaigns to defend the environment against the industrial activity, some respondents did not clearly identify Cel Net by name. In addition, another group, GEPEC, with a broader scope of action, had collaborated with Cel Net in some actions, and the two groups took similar approaches to the industry. As a result, we reworded the survey using more general terms, and asked about 'local environmental groups or platforms' rather than naming any particular organisation, as this was the term by which the environmental organisations in our study were known. In any case, and taking into account the results of the final survey, it should be noted that of the respondents who were able to identify an LEO by name, 95,4% mentioned Cel Net, while only 2.7% cited GEPEC. In September of the same year the fieldwork was carried out with the final version of the questionnaire, which consisted of closed questions with items measured on a five-point Likert scale (1, totally disagree and 5, totally agree). A total of 390 valid responses were obtained using simple random sampling. In the survey, which was broader in scope than the purpose of the present study, respondents were asked how familiar they were with these LEOs. If they had no knowledge of the organisations, the questions referring to them were discarded. Taking this fact into account, and considering some missing values due to including the control variables in the model, the results of the estimation of our model were based on 258 cases.

The model was empirically validated using structural equation modelling (SEM). We used the EQS 6.2 statistical software package and the maximum likelihood estimation method. The modelling consists of two stages: a confirmatory factor analysis test and a structural model or

causal test. Every effort was made in the research design and the data analysis to prevent and assess the effect of common method variance. In the research design stage we informed all the participants that their anonymity and the confidentiality of their responses would be guaranteed (Mackenzie and Podsakoff 2012). Additionally, in the survey we separated the questions on the independent variables from those on the dependent variables (Podsakoff and Organ 1986), as the questionnaire covered other variables not considered for this article.

Measures

The items representing the model variables (see Table 1) were adapted to our research context from previous studies. The legitimacy residents confer on the LEOs was represented by five items adapted from previous scales proposed by Chung et al. (2016), Jahn et al. (2020) and Kibler et al. (2014). The perceived risk was measured through five items, drawing on the work of Trumbo and McComas (2008). To assess the perceived benefits, three items were used from the study by Siegrist et al. (2000). Personal environmental beliefs were evaluated through five items based on Stern et al.'s (1999) study. Finally, credibility (trustworthiness dimension) was operationalised through three items asking whether the LEOs were believable and honest (Newell and Goldsmith, 2001), and whether they listened to and were sensitive to the environmental concerns of the local community. In their study of manager trustworthiness, Chiaburu and Lim (2008, p. 457) point out that trustworthiness "has precise behavioural engagements, including concern and respect for people, being open, listening to others' input, as well as leading by example". The last item of the scale, which reflects the interest of LEOs in listening to the concerns of the local community, is relevant to our study, taking into account that environmental organisations are criticised at times for their lack of capacity to truly reflect the needs of the local community (Torri and Herrmann,

2016). Finally, the research model included control variables that could be related to the legitimacy the residents granted to the LEOs. We analysed the literature on citizens' acceptance of potentially polluting industrial activity (Arning et al., 2018; Ismail et al., 2016; Jenkins-Smith et al., 2011) as well as research on pro-environmentalism attitudes (Cheung et al., 2019) to inform our selection of personal characteristics used as control variables. The following individual characteristics were finally selected: resident's sex, age, political ideology (left/right), income level, and whether they were employed by a firm in the complex.

Results

Several analyses were conducted to ensure that all the criteria met the desired characteristics of dimensionality, reliability and construct validity (convergent and discriminant). Firstly, we performed a confirmatory factor analysis to assess scale dimensionality. The results revealed that two items from the risk perception scale (P2.1 and P2.5) and two items from the personal environmental beliefs scale (P5.4 and P5.5) had a factor loading below 0.7, which raised doubts about their suitability (Fornell and Larcker, 1981). The items from the personal environmental beliefs scale had factor loadings of 0.567 and 0.532 and were removed. In contrast, the factor loadings of the items from the risk perception scale were 0.580 and 0.631, and although they were below the threshold of 0.7, it was considered appropriate to maintain them given their relevance in the configuration of the construct. The Lagrange multiplier test showed that one modification was necessary to improve the fit indices. This was the error correlation between the items P.2.5 and P.2.3, with very similar content for the individuals of the sample. The final measurement model showed an acceptable fit (Satorra-Bentler $\chi 2 = 420.71$, df = 211, p-value < 0.05, RMSEA = 0.06, CFI = 0.91, BBNFI = 0.83; BBNNFI = 0.88, IFI = 0.91), with all but two of the indices

satisfying the cut-off values (the BBNFI and BBNNFI indices were close to the threshold). The factor loading was higher than 0.7 (except for P.2.1 and P.2.5, whose values, as indicated above, were 0.580 and 0.631, respectively) and the t-test was significant for all items of the latent variables (Table 1). Composite reliability was used to assess the reliability of these scales, all of which were above the 0.7 threshold.

Insert table 1 about here

Convergent validity was assessed using the Bentler-Bonett normed fit index (BBNFI), which yielded a value (0.83) close to the recommended 0.9 threshold. In addition to this analysis, the average variance explained (AVE) of the latent variables of the model was higher than the recommended minimum value of 0.5. Finally, discriminant validity was also supported, since the square root of the average variance extracted (AVE1/2) of the latent variable was equal to or higher than the correlations between this variable and the other two factors (Table 2).

Taking into consideration the three factors considered in our model to explain the legitimacy of LEOs, the confirmatory factor analysis reflects significant correlations between two pairs of variables whose relationships were not hypothesised. The first is a statistically significant negative correlation between perceived risks and benefits (-0.529; $p < 0.05$). The second is a statistically significant positive correlation between the credibility of LEOs and perceived risk (0.209; $p < 0.05$). In the next section we will discuss what these correlations might be signifying.

Insert table 2 about here

In the second stage of SEM, we estimated the structural model (Table 3 and Figure 3). Several statistics corroborated an acceptable fit of the model (Satorra-Bentler X2 = 480.09; df = 228; p-value < 0.05; RMSEA = 0.07; CFI = 0.89; BBNFI = 0.81; BBNNFI = 0.86; IFI = 0.89), with the ratio (X2/df) below 5, and again with the remaining indices satisfying or close to satisfying the recommended cut-off values.

Insert table 3 about here

Insert figure 3 here

The analysis of the results corroborates the first of our hypotheses (H1), as we found a positive and significant relationship between risk perception and legitimacy (b = 0.236; p<0.05). However,

the second hypothesis (H2), which posited a negative relationship between perceived benefits and legitimacy, was not corroborated by the results of the estimation ($b = 0.128$; $p>0.05$). The third hypothesis (H3), which established a positive relationship between credibility and legitimacy, was also verified by our analysis ($b = 0.665$; $p <0.05$). In turn, hypothesis 4, which posited a positive relationship between personal environmental beliefs and legitimacy (H4), was not corroborated by the results of the estimation ($b = 0.001$; $p>0.05$). Furthermore, the results did verify the positive relationships hypothesised between personal environmental beliefs and credibility of LEOs (H5: $b = 0.266$; $p<0.05$), and between personal environmental beliefs and perceived risk (H6: $b = 0.290$; $p<0.05$), but the negative relationship proposed between personal environmental beliefs and perceived economic benefits (H7) was not supported ($b = -0.101$; $p>0.05$). The total effect of personal environmental beliefs –taking into account the sum of the direct effect ($b = 0.001$) and the indirect effect ($b = 0.233$)– on legitimacy of LEOs is $b = 0.234$ ($p<0.05$). Finally, regarding the control variables, only political ideology had a significant relationship with the legitimacy of LEOs ($b = -0.111$; $p<0.05$). More specifically, those members of the local community with a more left-wing political orientation granted greater legitimacy to LEOs. These results are consistent with the literature (e.g., Mobley et al., 2010; Cheung et al., 2019) that suggests pro-environmental attitudes and behaviours are manifested to a greater degree by more left-leaning individuals; consequently, these individuals are the ones who grant greater legitimacy to LEOs.

Discussion and conclusions

This study focuses on the legitimisation of LEOs by local community members –a key actor when it comes to granting legitimacy to LEOs, but to date they have received little attention in the academic literature. Considering an individual's judgement of legitimacy as an attitude, and through an approach of combining risk-benefit analysis with the social psychological literature, we proposed a model stating that local community members' legitimacy judgements of LEOs are influenced by beliefs and perceptions at three different levels: contextual level, LEO level and personal level.

This research makes several contributions to the literature. First, it shows that the legitimacy of LEOs is conditioned by the perceptions of the context in which they develop their activities. The contextual factors, which in our research are approached in terms of the perception of the local industry risk-benefit controversy, determine the need for or justification of the LEOs by their social systems, which in turn determines their legitimacy. More specifically, our case study findings show that a greater perception of risk from the local industrial activity contributes to a greater legitimacy of the LEOs. The higher perceived risk would explain the public's acceptance of LEOs in that these organisations contribute by pressurising companies and public administrations to improve the firms' environmental performance. In this way, going beyond the claims that LEOs' legitimacy rests on their strategies and behaviours, our findings corroborate the need to pay attention to the individual's perceptions of the context in which the LEOs emerge and develop their activities.

Moreover, of the two contextual factors considered, risk has a more decisive impact on LEOs' legitimacy than benefits. In fact, our results show a non-significant direct impact of the benefits attributed to the industrial activity on the LEOs' legitimacy. Although his study differs from ours

in that it analyses trust, Slovic (1993) applies the asymmetry principle and finds that perceived negative events have a far stronger determining effect than positive ones. Testing of this principle has been replicated in several studies, some of which analyse polluting industries (Cvetkovich et al., 2002; Siegrist and Cvetkovich, 2001). One possible reason why people attribute greater importance to negative events may be because of their extreme aversion to losses and costs (Kahneman and Tversky, 1984). In this vein, and in relation to the petrochemical industry, López-Navarro et al. (2016) showed that residents prioritise environmental issues over economic ones in their behavioural intentions, thus endorsing the argument that the damage of a loss (environmental costs) tends to outweigh the benefits (economic consequences). Apart from the relative importance of both factors, recall that the results of the confirmatory factor analysis showed a negative correlation between judgements of risk and benefit, a correlation already highlighted in previous studies (e.g., Alhakami and Slovic, 1994; Siegrist et al., 2000). In summary, the current study supports the utility of risk-benefit analysis in assessing the degree to which local community members perceive the environmental controversy they face and understanding how these perceptions influence their judgements of legitimacy about the LEOs which can shape that reality. Second, our study shows that an individual's beliefs about the credibility of LEOs influence their legitimacy judgements about them. Credibility is therefore a key element for LEOs, given the limited resources at their disposal and the need to make their voices heard. Credibility is also essential for these organisations to combat accusations of irrationality or hysteria from other actors (Berry, 2003; Kroll-Smith and Couch, 1991). This work adds support to previous research, which corroborate the positive relationship between credibility and legitimacy (Finch et al, 2015; Jahn et al., 2020; O'Neill et al., 2022), although these studies focused on the legitimacy of industries and companies, not LEOs. One issue we identified when evaluating the results of the confirmatory

factor analysis was the significant positive correlation between the credibility of the LEOs and the risk perceived, a relationship for which no hypothesis was proposed. This could be a relevant issue to address in future research, although it may be difficult to establish the direction of causality. On the one hand, in contexts of high perceived risk, it is reasonable to assume that individuals tend to attribute greater credibility to LEOs, since they are created to defend the local community interests in dealing with the environmental problems generated by the industry. On the other hand, the emergence of these organisations and their protests about the industry's activity, the information they provide on companies' inappropriate behaviours, or their reporting of high levels of pollutants and their effects on public health may also contribute to increase the risk perceived by the population. Risk perception has a strong social component as "it depends on the social and political context in which hazard risk is experienced" (Larock and Baxter, 2013, p. 729). Consequently, the credibility of the different agents will contribute to the perception of risk (Trumbo and McComas, 2003). Similarly to the way companies' communication policy, in their relations with citizens, can contribute to improving trust and reducing the perception of risk (Tortosa et al., 2014), believable and honest communication from LEOs on the environmental issues associated with the industrial activity may increase the risk perceived by members of the local community. In any case, the results of our confirmatory factor analysis suggest correlations between credibility of LEOs and risk perception, and future studies should explore this relationship in greater depth to enhance understanding of how these variables influence legitimacy.

Third, the results of our study confirm that personal environmental beliefs do not influence legitimacy directly, although they do so indirectly through their influence, as a general belief, on specific beliefs, namely the credibility of LEOs, as well as through their influence on risk judgements. Therefore, although not directly, personal environmental beliefs have an important

role as an antecedent variable in explaining how an individual judges legitimacy of LEOs. More specifically, the findings corroborate that local community members with strong environmental beliefs –those more concerned about environmental vulnerability– give greater credibility to the LEOs in their role of promoting local environmentalism, and campaigning for environmental justice and for greater environmental responsibility from the companies located on the industrial site. Furthermore, findings also show the importance of personal environmental beliefs when individuals interpret the information about environmental risk, in that strong environmental beliefs translate into a greater perception of risk. These results are consistent with the hierarchical nature of the individual belief system (Feather, 1995), in that general beliefs influence specific beliefs, as well as the way in which individuals interpret their perceptual experiences (Slimak and Dietz, 2006).

To summarise, this research contributes to the literature on the legitimacy of LEOs by showing the need to consider three different levels when determining the factors that influence individual legitimacy judgements by members of the local community (the most relevant stakeholder when granting legitimacy to these organisations): the context in which the LEOs emerge and develop their activities, the LEOs themselves, and the individual's personal environmental beliefs.

Although the results of our research are encouraging, they are tempered by its limitations. First, our research focused on a specific case study and is therefore limited by its specific characteristics. Second, our research uses cross-sectional data, and therefore precludes any analysis of how individuals' perceptions, beliefs and legitimacy judgements may change over time and how these elements interact on the basis of such changes. Future longitudinal studies could usefully focus on this question. Third, we focused on a limited set of perceptions and beliefs that influence the local community members' judgements of LEOs' legitimacy; we regarded these factors as relevant

given the context of our research. Following the same reasoning, in our study we have considered a certain number of control variables. This implies that other control variables, such as civic engagement, have been omitted, variables that could be judged as relevant and that could be addressed in future studies. In any case, we recognise that our model is a partial representation and future studies should develop a fuller depiction of the factors that influence individuals' judgements of legitimacy. Finally, it should be noted that, although it was not the objective, this research refers to the relationships between local environmental organisations and academic institutions. The relevance of partnerships between these two actors, or between communities and universities (see, for example, Hidayat and Stoecker, 2021), suggests this as an issue to be addressed in future research.

Disclosure statement

No potential conflict of interest was reported by the authors.

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FIGURE 1

Research model

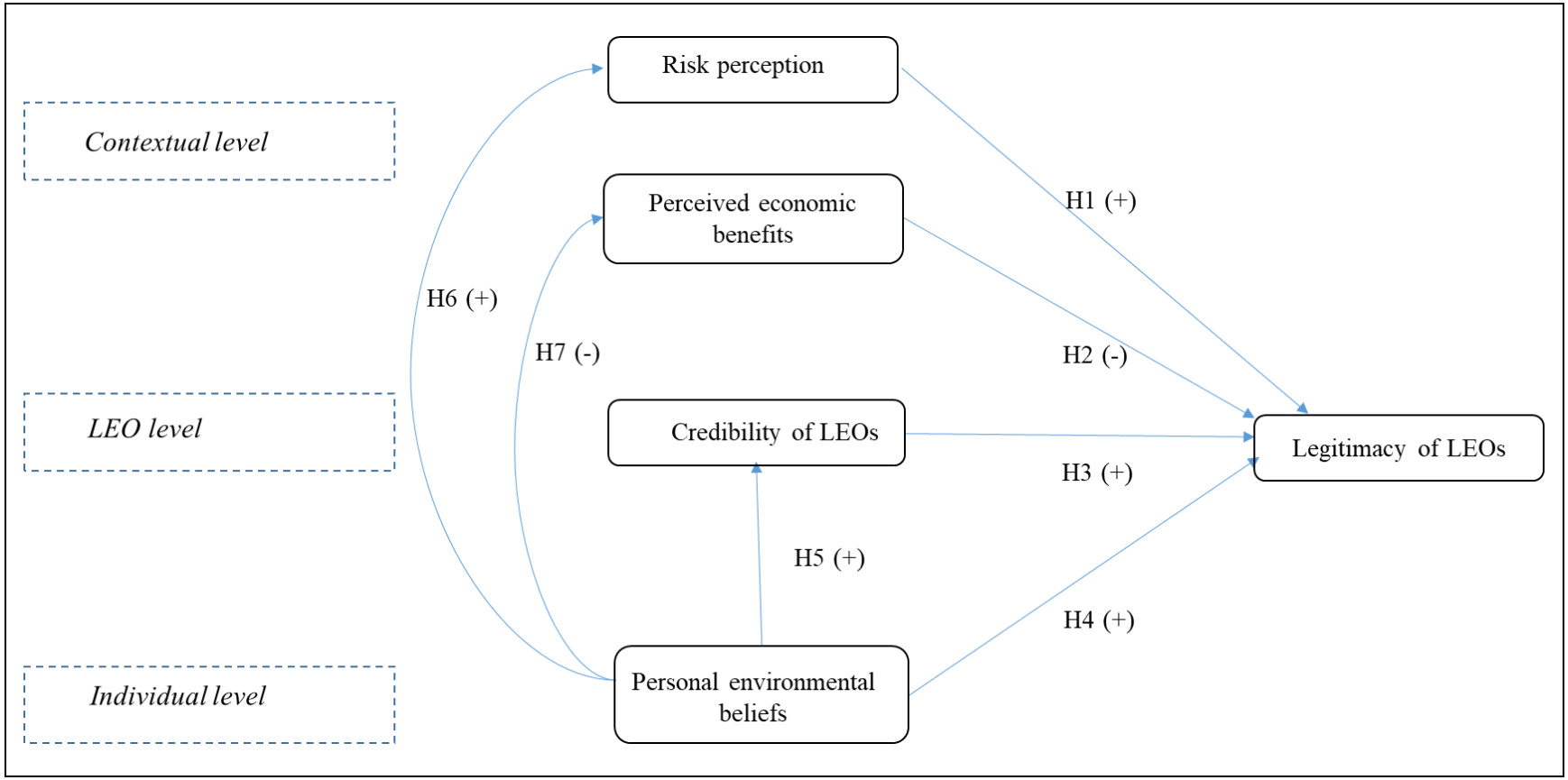
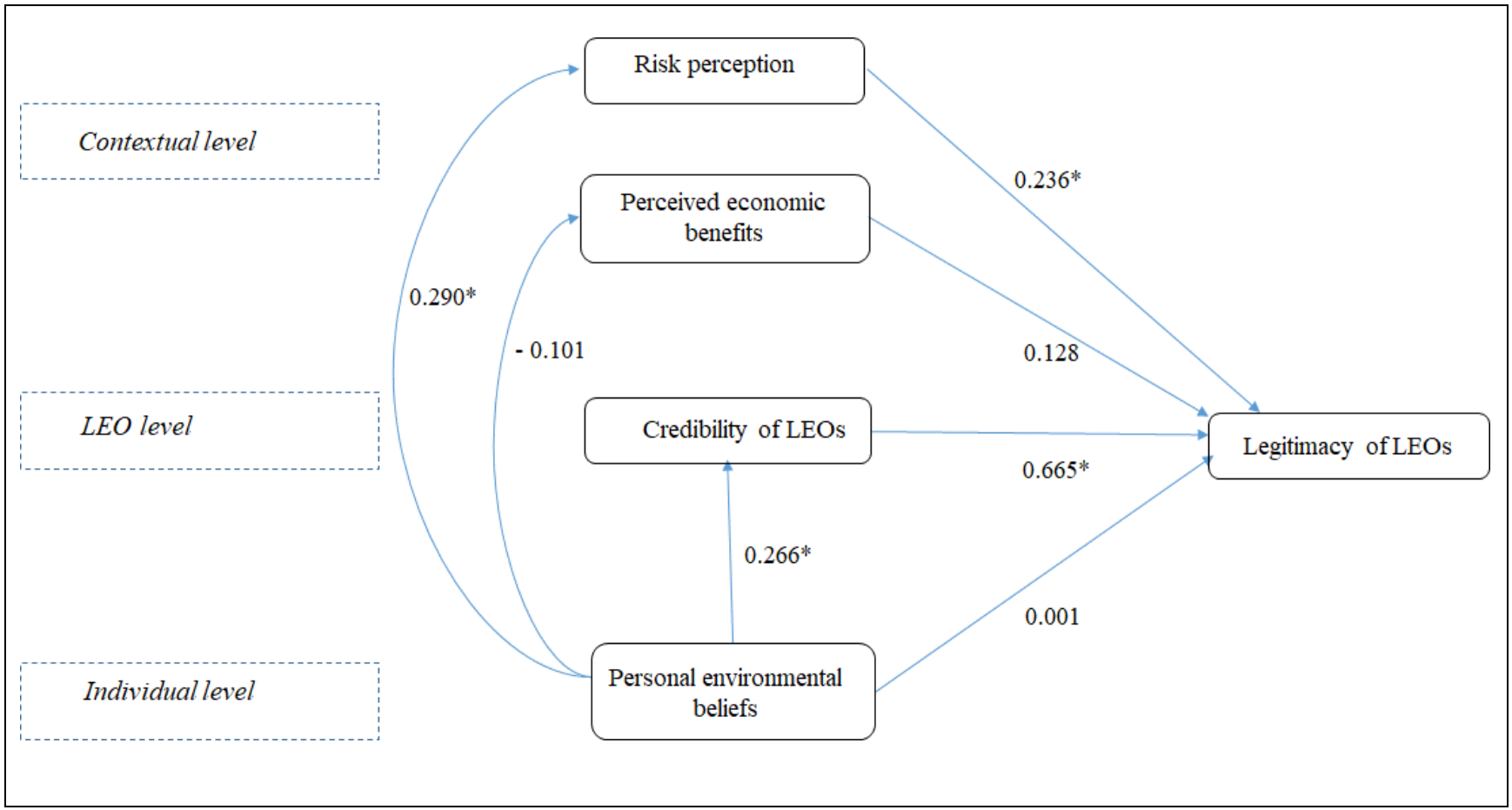


FIGURE 2
Map of ‘Northern’ petrochemical complex in the Tarragona area

FIGURE 3

Estimated model



* Significant at $p \leq 0.05$

TABLE 1
Dimensionality, reliability and convergent validity of the scales of the model

Items	Mean	Standard Dev.	Factor Loading (standardised)	t-Test
Legitimacy of the LEOs [(1)] AVE = 0.63, Composite Reliability = 0.89				
P.1.1. I have a positive opinion of these platforms.	3.17	1.03	0.870	Fixed
P.1.2. These platforms help to achieve environmental improvements in the area.	3.31	0.97	0.801*	14.04
P.1.3. These platforms are necessary to safeguard residents' wellbeing.	3.46	0.99	0.772*	13.44
P.1.4. These platforms respond to local residents' environmental demands.	3.25	1.04	0.726*	11.95
P.1.5. I want these platforms to continue with their activities (I don't want them to disappear).	3.50	1.08	0.793*	17.10
Risk perception AVE = 0.51, Composite Reliability = 0.83				
P.2.1. I believe my health is exposed to risks by living in this area.	4.13	1.04	0.580	Fixed
P.2.2. I frequently worry about the risks related to living in this area.	3.35	1.16	0.756*	8.10
P.2.3. The secondary health effects of living in this area are largely unknown.	3.64	1.24	0.718*	8.27
P.2.4. I am concerned that living in this area poses risks that will extend to future generations.	3.65	1.21	0.839*	8.52
P.2.5. The risks to health associated with living in this area have increased in recent years.	3.09	1.32	0.631*	6.13
Perceived economic benefits AVE = 0.60, Composite Reliability = 0.82				
P.3.1. This petrochemical complex helps to prevent the area from facing an economic crisis.	3.59	1.17	0.762	Fixed
P.3.2. If we want to avoid problems in the future, we can't turn our backs on this complex.	3.04	1.15	0.777*	8.67
P.3.3. This complex is important for the economy in the area.	3.73	1.09	0.785*	9.29
Credibility of the LEOs				

AVE = 0.76, Composite Reliability = 0.91				
P.4.1. I believe these platforms when they say they are doing everything possible to defend my wellbeing as a resident.	3.26	0.97	0.865	Fixed
P.4.2. These platforms provide open and honest information about the environmental risks in the area.	3.24	1.00	0.892*	20.61
P.4. 3. These platforms listen to and are sensitive to the environmental concerns of the area's residents.	3.29	1.02	0.864*	20.15
Personal environmental beliefs AVE = 0.66, Composite Reliability = 0.85				
P.5.1. Humans are severely abusing the environment.	4.47	0.79	0.870	Fixed
P.5.2. The Earth has very limited space and resources.	4.38	0.81	0.792*	11.76
P.5.3. The balance of nature is very delicate and can easily be upset.	4.54	0.72	0.773*	9.10
Control Variables				
P.6. Resident's sex	1.45	0.50	-	-
P.7. Resident's age	39.76	11.33	-	-
P.8. Monthly household income	3.27	0.69	-	-
P.9. Resident works o not in the North complex	1.87	0.34	-	-
P.10. Resident's political ideology	4.22	2.17	-	-
Fit of the model: Satorra-Bentler chi squared = 420.71; df = 211; p-value = 0.000; RMSEA = 0.06; CFI = 0.91; BBNFI = 0.83; BBNNFI = 0.88; IFI = 0.91				

* Significant at $p \leq 0.05$

(1) In the original survey in its Catalan and Spanish versions, we use the terms groups/platforms, because these were the names attributed to the main local environmental organisations in the context of the territory where the research was carried out.

Items P5.4 (The Earth will soon be unable to support the number of people in the world), and P5.5 (If things continue on their present course, we will soon experience a major ecological catastrophe) were removed from this analysis.

TABLE 2
Discriminant validity of the scales

Factors	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Legitimacy	0.794									
(2) Risk perception	0.309*	0.711								
(3) Perceived economic benefits	-0.063	-0.529*	0.775							
(4) Credibility	0.711*	0.209*	-0.095	0.874						
(5) Personal environmental beliefs	0.244*	0.282*	-0.099	0.250*	0.813					
(6) Resident's sex.	0.087	0.213*	-0.094	0.074	0.015	-				
(7) Resident's age.	0.097	-0.188*	0.323*	0.072	0.118	-0.174*	-			
(8) Monthly household income.	0.002	0.037	0.049	0.079	0.126	-0.071	0.068	-		
(9) Resident works or not in the North complex.	0.209*	0.238*	-0.304*	0.205*	0.142*	0.125*	-0.116	-0.048	-	
(10) Residents' political ideology	-0.252*	-0.157*	0.091	-0.181*	-0.168*	-0.014	-0.055	-0.001	-0.166*	-

Diagonal: square root of AVE of a latent factor
Below the diagonal: Pearson correlation coefficients between variables
* Significant at $p \leq 0.05$

TABLE 3
Hypotheses corroboration

Direct relation	Parameter estimates (standardised values)	S. E.	t-Test
H_1: Risk perception → Legitimacy of LEOs	0.236*	0.132	2.62
H_2: Perceived economic benefits → Legitimacy of LEOs	0.128	0.078	1.58
H_3: Credibility of LEOs → Legitimacy of LEOs	0.665*	0.062	11.24
H_4: Personal environmental beliefs → Legitimacy of LEOs	0.001	0.092	0.02
H_5: Personal environmental beliefs → Credibility of LEOs	0.266*	0.104	3.13
H_6: Personal environmental beliefs → Risk perception	0.290*	0.071	3.55
H_7: Personal environmental beliefs → Perceived economic benefits	-0.101	0.105	-1.27
Relations between Control variables and Legitimacy:	Parameter estimates (standardised values)	S.E.	t-Test
Resident's sex → Legitimacy of LEOs	0.013	0.088	0.25
Resident's age → Legitimacy of LEOs	0.067	0.005	1.06
Monthly household income → Legitimacy of LEOs	-0.061	0.063	-1.23
Resident works or not in the complex → Legitimacy of LEOs	0.054	0.147	0.95
Resident's political ideology → Legitimacy of LEOs	-0.111*	0.021	-2.17
Indirect relation	Parameter estimates (standardised values)	S. E.	t-Test
Personal environmental beliefs → Legitimacy of LEOs	0.233*	0.077	3.88
Dependent Factor	R^2		
Perceived economic benefits	0.010		
Risk perception	0.084		
Credibility of LEOs	0.071		
Legitimacy of LEOs	0.542		
Goodness-of-fit indices for the structural model	Satorra-Bentler chi square = 480.09; df = 228, p-value = 0.000; RMSEA = 0.07; CFI = 0.89; BBNFI = 0.81; BBNNFI = 0.86; IFI = 0.89		

* Significant at $p \leq 0.05$