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The elusive strategic behavior of Cameroonian industries in the face of ecological data

Le comportement stratégique insaisissable des industries camerounaises face à la donnée écologique

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Abstract

The rise in ecological concerns in recent years has made it essential to take this factor into account in company management. In this context, where the normative constraint guides a new industrial culture, firms are developing different strategies. In view of the importance of the conflict between economic objectives and the consideration of the ecological aspect in strategic decision-making, the aim of this study is to highlight the typologies of strategic behavior of industrial companies with regard to ecological data in the African context, and more specifically in Cameroon. The methodology adopted is based on an inductive case study approach. Indeed, we not only conducted semi-directive interviews but also collected secondary data from 8 industrial companies. The results obtained show that out of the five criteria used to characterize strategic behaviors, none of the eight cases studied showed a stable behavior that would allow them to be characterized as eco-conformist or eco-sensitive.
Keywords: strategic behavior; strategic decisions; ecological environment; eco-conformist; eco-sensitive.

Résumé

La montée des préoccupations écologiques ces dernières années a rendu essentielle la prise en compte de ce facteur dans la gestion des entreprises. Dans ce contexte, où la contrainte normative guide une nouvelle culture industrielle, les entreprises développent des stratégies différentes. Compte tenu de l'importance du conflit entre les objectifs économiques et la prise en compte de l'aspect écologique dans la prise de décision stratégique, l'objectif de cette étude est de mettre en évidence les typologies de comportements stratégiques des entreprises industrielles au regard des données écologiques dans le contexte africain, et plus spécifiquement au Cameroun. La méthodologie adoptée repose sur une approche inductive d'étude de cas. En effet, nous avons non seulement mené des entretiens semi-directifs mais également collecté des données secondaires auprès de 8 entreprises industrielles. Les résultats obtenus montrent que sur les cinq critères utilisés pour caractériser les comportements stratégiques, aucun des huit cas étudiés ne présente un comportement stable permettant de les qualifier d'éco-conformistes ou d'éco-sensibles.
Mots clés : comportement stratégique ; décisions stratégiques ; environnement écologique ; éco-conformiste ; éco-sensible.

Introduction

Industry, long considered as a symbol of man's domination over nature, is now faced with a new requirement: respect for the biosphere. Ecology has not only become in a few years an obligatory frame of reference, but also, for the company, a major economic issue (Dellech Debabi et al., 2018). In this perspective, industrial ecology can be defined according to Boiral and Croteau (2001) as an integrated approach to the analysis and reduction of material and energy flows aimed at improving the eco-efficiency of industrial metabolisms through the promotion of technologies, values and practices designed to ensure the protection, sustainability as well as the renewal of the resources necessary for development. Initially promoted by large American companies, environmental considerations have inspired the strategies of some large European and now African industrial companies. Encouraged by the public authorities, industrial companies are beginning to commit themselves to environmental protection by introducing the ecological component into their decision-making. In Cameroon, many initiatives have been put in place by the public authorities with a view to enhancing the ecological environment. Thus, there are approximately 223 standards, 19 laws, 2 ordinances, 19 decrees and 12 orders obliging companies to take the ecological environment into account (Djouberou, 2019). Thus, Cameroonian companies, at least the vast majority of them, have understood the challenges of taking the ecological environment into account. Environmental issues therefore represent a dominant social concern from which few companies can escape. The reduction of environmental impacts appears to be a strategic objective in order to meet current or future regulatory standards and to ensure the social legitimacy of the company. However, according to INSEE (2017), not all companies behave in the same way when it comes to environmental protection.

From a theoretical point of view, the study of the relationship between the company and the ecological environment has given rise to an abundant literature over the years. Two major currents can be discerned: a current adopting an approach described as managerial, the researchers who defend this view tend to represent the ecological environment as an objective component of the organizational environment (Viardort 1993, Boiral and Jolly 1992, Hunt and Auster 1990, Hart 1995) and another defending an integrative view of the ecological environment (Purser et al. 1995, Gladwin et al. 1995). Each of these perspectives has a different, even divergent, epistemological basis. However, these two currents, although antithetical, can in some cases coexist and lead to a consideration of the ecological environment.

Similarly, in the literature, there is a wealth of literature on the factors that distinguish the level of corporate environmental commitment (Syed and But, 2017; Zhang and Chen, 2017; Walls et al., 2012; Setyawan and Kamilla, 2015). Generally recognized factors include: stakeholder pressure, availability of financial resources, governance, organizational characteristics, and attitudes of its leaders (Djoutsa Wamba et al. 2022). Similarly, the majority of the results of subsequent work have highlighted three strategic behaviors towards the ecological environment: eco-defensive behaviors, eco-conformist behaviors and finally eco-sensitive behaviors (Martinet and Reynaud, 2004; Carroll, 1979; Hunt and Auster, 1990; Aspe, 1992; Heraud and Llerana, 1992; Ledgerwood et al. 1993; Louppe and Rocaboy, 1995; Hutchinson, 1996; and Bellini, 2003).

Faced with these different works, we therefore ask ourselves whether these different behaviors identified in European context can subsist in an African context and more specifically in Cameroon? This study, which takes place in an African context in general and in Cameroon in particular, aims to highlight the elusive nature of the strategic behavior of Cameroonian industrial companies with regard to the ecological environment, based on an approach that differs from subsequent work.

To achieve this objective, this article is based on four points namely: the review of literature through the presentation of the various basic strategic environmental behaviors, the theorical context of the study, the methodology adopted and finally the results and discussions.

1. The review of literature: Basic strategic environmental behaviors

Although the need to take ecological and social expectations into account in the management of companies has been widely demonstrated (Donald and Preston, 1995; Hart, 1997), there is a certain heterogeneity in the choices made in terms of strategic behavior, oscillating between a lack of response and a proactive attitude (Sharma and Vredenburg, 1998). Three managerial logics can be observed.

While on the one hand, for some, taking the ecological environment into account is synonymous with restrictive and costly requirements, on the other hand, it can be likened to an ecologically responsible policy that is a source of opportunities and value creation (Persaix, 2002). Indeed, while some adopt an adaptive response to sectorial constraints (legal pressures at national and local level) allowing them to align themselves with ecological requirements, others seek to anticipate or even exceed the level of constraints in a logic of discretionary choice.

This typology is similar to that proposed by Martinet and Reynaud (2004), who identify wait-and-see, adaptive and proactive attitudes, as well as that of Carroll (1979), Hunt and Auster

(1990), Aspe (1992), Heraud and Llerana (1992), Ledgerwood et al. (1993), Louppe and Rocaboy (1995), Hutchinson (1996) and Butel-Bellini (2003), who identify three types of industrial ecological behavior: eco-defensive behavior, which favors immediate economic returns and considers environmental investments only as costs, eco-conformist behavior, which follows regulatory requirements without going beyond them, even if this is possible, and, finally, ecologically sensitive behavior, which goes beyond the legal requirements, the ecological data being considered as a key element of the company's sustainability

1.1. Eco-defensive behavior

The current trend is undeniably towards stricter environmental legislation and increased expectations in this area. As a result, the firm must at least meet these societal requirements (Freeman, 1984). For the eco-defender, taking into account ecological data creates strong legal constraints and therefore is a source of significant costs to meet them. The financial logic and immediate economic results take precedence for the eco-defensives, who are concerned with the short term. In this sense, eco-defense is measured by the nature of the trade-offs made between social, ecological and economic considerations. The exclusive search for profit leads to thinking of ecological investments as unnecessary costs, to be limited, or even antagonistic to the economic dimension.

This type of behavior is characteristic of those who pay the fines when the required investments are more expensive. It is a question of maintaining current practices without integrating the ecological data. This behavior presents risks (financial or otherwise) because the infringements of regulations are significant. Ecological data, when considered, is only part of the technical domain: it is one more piece of data in the definition of the tasks. Keeping the same objective (that of limiting ecological actions), this variant can be translated in several ways:

- Actively: trying to limit the integration of ecological data through lobbying or various pressures;
- Passively: ecological data will not be integrated under the pretext of ignorance, which may or may not be voluntary.

Eco-defensive behavior is not common, given that the risk of not complying with environmental legal requirements is becoming increasingly important, and that controls are becoming stricter. This type of behavior can be seen above all in SMEs, which are less supervised and which are not aware of the legislation, whether voluntarily or not, but this situation is less and less accepted by the public authorities. This behavior may also be the case for large industries with some bargaining power, but this remains very marginal.

1.2. Eco-conformist behavior

Company managers can also adopt another type of behavior described as adaptive by Martinet and Reynaud (2004). They comply with regulations, respecting standards without exceeding them even if this is technically possible and thus limiting the risks of infringement incurred in the event of non-compliance with the laws in force. They seek to minimize risks and investments by complying with legal standards as little as possible. Investments are then perceived as necessary but limited costs: taking the ecological environment into account is recognized as indispensable, but investments must be minimized. Therefore, minimum compliance with legal standards is sufficient. The primary objective of this type of behavior is to maintain optimal profit by preserving the legitimacy of the firm's activities by shareholders and customers.

Indeed, managers who adopt an eco-conformist attitude are primarily seeking to reduce the legislative uncertainty associated with the tightening of environmental considerations. For these managers, ecological enhancement does not present any strategic advantage. It creates technical and organizational constraints, generates additional adaptation costs and does not create value. In terms of decision-making, responsible policy is a variable of little importance that never leads to in-depth changes in the organization in place. In this type of compliance behavior, the firm considers the ecological environment as insurance to minimize the damage and risks generated by the activity. This ecological behavior on the part of managers can be explained, among other things, by the adoption of the theory of negative externalities, which assumes that any environmental impact results in costs that will not be borne entirely by the responsible firm but by society (Boutillier, 2003).

While this is the majority behavior at present as companies become aware of the risks involved (both monetary and non-monetary) and the need to protect the natural heritage and respect social expectations, there are many risks inherent in such responses.

This behavior relates to simple environmental management and aims to reconcile ecological concerns with productivity without questioning the very foundations of the dominant production and consumption system. It is also part of a classical 'anthropocentric' perspective, i.e. it is based on the idea that nature is worth protecting only insofar as the earth is the living environment of the human species, and excessive deterioration of the natural environment would run counter to purely human interests. This is the position brutally expressed by Tazieff (1992) when he states that the Earth must serve humanity because if humanity disappears, the fate of the Earth is of no importance to anyone. In the best of cases, this position is limited to underlining the 'responsibilities of man' with regard to a nature that is primarily conceived as a capital that should not be wasted recklessly.

Eco-compliant behavior is the most fashionable: companies are now aware of the need to take the environment into account, at least as regards minimum compliance with legal obligations.

To break this deadlock, a number of economists, theorists or environmental groups and practitioners propose to adopt an alternative behavior that they call proactive or ecologically sensitive.

1.3. Proactive behavior

The latter occurs when the policy of enhancing the ecological environment is implemented with the aim of influencing other operators in the production chain. Eco-sensitivity should be taken in a broad sense; it encompasses the ethical, socially responsible and ecological commitment of the company. Eco-sensitivity does not focus on immediate financial profitability; social and ecological investments must produce longer-term effects. In this case, the ecological data is fully part of the company's strategy. The system for measuring the performance of such a policy is based on the long term. They perceive ecological investments as profitable in the more or less long term. The benefits are in terms of costs (reduction in production costs), legitimacy (image conveyed to stakeholders, corporate culture) and differentiation (product quality, labelling, etc.).

Indeed, these managers often go beyond the norms imposed by the regulations in order to achieve optimal profit while improving quality and performance in a quest for legitimacy. For this behavior, managers must have the appropriate management tools and significant financial means.

Environmentally sensitive managers are generally proactive, not waiting for legislation to be passed to integrate environmental and social data into their management. They go beyond the standards imposed by the regulations if they are technically able to do so, as ecological data is considered a key element of the company's sustainability. But this behavior is not the result of an exclusively ideological logic. Instrumental logic is not absent from the reasoning of the ecologically sensitive. The latter benefits from his action. Indeed, the proactive manager pursues multiple objectives:

* A profit objective: This is the case when an opportunity for new markets is created (eco-industries), when anticipation of standards is likely to influence the setting of standards. Analysis of the company's motivation to go beyond legal requirements reveals several profit-related situations (Hutchinson, 1996):

- Environmental compatibility with business;
- Fundamental change in the approach to business including environmentally compatible concepts;
- Anticipating standards for strategic advantage;
- Source of legitimacy after external pressure;
- Measures taken after an accident;
- Opportunities for new markets;
- Possibility of developing a product niche;
- Source of environmental mission.

* An objective of improving the industry's image: Particular attention is paid to legitimacy through the brand image, and to internal management through working conditions. The company then seeks greater legitimacy within society. Ethical ecological actions are carried out, corresponding to non-legislated expectations, and other actions unrelated to the productive activity can be carried out (discretionary actions), such as the publishing of educational kits.

* An objective of improving the quality of the product: Ecological data is taken into account in the evaluation of the overall performance of the product. Its integration is sometimes demanded by customers: this is why it is becoming a competitive factor. On the other hand, the preferred concept of companies in terms of institutional communication is product quality.

For these leaders, ecological data is strategic. Ecology is no longer considered as a decision-making criterion but as a goal of action in the same way as the economy. This behavior, although very attractive, requires the manager to adapt management tools and significant human and organizational resources to lead these developments. Thus, managers tend to adopt preventive technologies even if they are more expensive than control technologies. Companies accept to modify their production processes in favor of a cleaner process. Also, the increased importance given to environmental protection is accompanied by a strengthening of managerial environmental commitments. Companies tend to implement an environmental management system (EMS) even if it is not certified. As Hunt and Auster (1990) argue, the adoption of more environmentally friendly behavior is reflected in a strengthening of managerial environmental commitments: setting environmental objectives, formulating an environmental strategy, carrying out environmental reporting, etc.

Instead of simply assessing the financial cost of risks, determining bearable pollution rates, and multiplying penalties, taxes and other regulations, the followers of this new vision propose to completely rethink the current way of organizing society, to do away with the hegemony of productivism and instrumental reason, in short, by breaking with the religion of growth and the monotheism of the market, to act on the causes rather than the effects.

This radical ecologism is based on the theses put forward in 1949 by the famous naturalist and forester Leopold. It involves a critique of anthropocentrism that can take various forms. In its most 'moderate' variant, man is seen as an integral part of a 'cosmic' whole from which he cannot be abstracted, without denying the particularities of the human species and the higher dignity that is attached to it. But this critique of anthropocentrism can also be pushed to the extreme, to the point of leading to a kind of egalitarian 'bio-centrism', which posits the equivalence in value of all forms of life (or even all forms of objects) contained in the universe and tends to consider them as genuine subjects of law. In any case, this radical ecologism calls for a new ethic and a new way of seeing the world. It professes that nature deserves to be protected independently of its usefulness to man and generalizes a principle of prudence based on a new form of 'learned ignorance': since the long-term consequences of a transformation of the natural environment can never be fully foreseen, it is better to abstain whenever the risk inherent in a given action seems very great.

One of the most radical currents in this perspective is that of deep ecology, which emerged at the end of the 1970s. A movement of thought that is more philosophical than political, and open to quite different trends, deep ecology rejects both individualism and anthropocentrism, which are considered to be intrinsically conducive to an 'instrumentalist' attitude towards the environment, and advocates a 'wisdom' centered on nature that aims to restore harmonious symbiotic relationships between all living things.

For Filoramo (1993), deep ecology can be defined "as an attempt to order man and nature ontologically, with the aim of creating a way of thinking and acting, a new philosophy of life, a new ecological paradigm characterized by its holism and radicalism: holistic, because it refuses the atomization of knowledge and reality; and radical because it wants to go to the roots of things, criticizing and deconstructing the techno-morphic machine created by modern science while restoring in its integrity the lost sense of harmony between man and nature." The proponents of this current are led to reject the very consequence of this elevation of man above nature and of the individual above the group, namely the proclamation of human rights.

However, it should be noted that environmentally sensitive behavior remains idealistic, and is rarely found in reality (Wilson 1994). The companies corresponding to this type of behavior are aware that the environment can play a considerable role in the competitive battle. In general, this applies mainly to companies belonging to powerful groups with significant financial resources, or to companies of various sizes that have managed to seize new markets.

The cross-referencing of these three typologies allows us to produce the following summary table based on the literature.

Table 1: Comparison of basic typologies of behavior in integrating the ecological environment into company strategy

	Eco-friendly	Eco-conformist	Eco-sensitive
Logic of action	Exclusion of ecological liability, Purely economic logic	Compliance with regulatory requirements	Exceeding regulations
Type of arbitration	Focus on economic aspects	Focus on economic aspects and institutional legitimacy	Focus on cost containment, legitimacy to society at large and differentiation
Time scale	Short or very short term	Short and medium term	Long to very long term
Perception of ecological data	Threat	Constraint	Opportunity
Primary objectives	Profit	Maintaining optimal profit and preserving legitimacy	Optimal profit, improvement of the quality of the ecological environment
Perception of investments related to environmental aspects	Unnecessary costs to be avoided, antagonistic to profit	Costs to be minimized	Cost-effective
Addressing the environmental issue	Total exclusion (even by regulation)	From exclusion beyond the purely regulatory aspect to regulation	Anticipation and prevention

Source: Authors

2. Theoretical background

2.1. Resource theory as a factor in understanding the internal environment

The idea is to show that the valorization of the ecological environment cannot be reduced to an instrumental approach to deal with the obstacles of staff motivation and conviction, size, centralized structure, availability of material and financial resources, but that it must be a part of organizational strategy. Ecological consideration, as a modality of organizational strategy available to managers, is dependent on the organization. This can be a strength or a weakness. The industrial firm evolves over time, which means that it is, as Penrose (1959) pointed out, a collection of resources, whose growth results from the accumulation of idiosyncratic resources. This vision of the company, which stems from Penrose's work, shows that industry is situated in a learning approach in terms of the enhancement of the ecological environment and is a matter of managerial cognition which modifies its representation. Managers rely on resources to develop their strategy. This means, according to Pfeffer and Salancik (1978), that the company depends on its environment and that its sustainability depends on its ability to manage the needs of groups, whose resources and support are indispensable. From this perspective, the resource approach shows that ecological responsibility is a strategic resource that industries must manage and value in order to reduce conflicts of interest. Capron and Quairel-Lanoizelée (2007) argue that companies engage in environmental actions out of compulsion in order to respond to pressures from resource providers. The relationship between the manager and the other stakeholders is analyzed in terms of the provision of resources. The implementation of an environmental process presupposes coherence between the entrepreneur's representation, the resources and tools at his disposal and the pressures of the environment (Quairel-Lanoizelée and Auberger, 2004). The theory of resources is based more on a utilitarian conception of the practice of the ecological aspect than on an ethical approach, and makes it possible to analyze the role and the place of the manager. Thus, the place of ecology in industries is reactive and adaptive.

2.2. Institutional theory

Institutional theory is the second theory chosen. Because it studies the institutionalization of ideas, it is useful for understanding how environmental concerns are generated and accepted inside and outside the organization (Meyer and Rowan, 1977; Zucker, 1987). This theory analyses the acceptance of practices and can be useful in determining how to achieve an institutionalization process (Scott and Meyer, 1994).

The essence of the institutional perspective is the emphasis on cognitive and normative patterns that give meaning and stability to social life. The actor has a key role here. Institutionalism appears broad because it has been enriched by broad intellectual developments in the social sciences on the 'new culturalism' (Wuthnow et al. 1984), 'the interpretive turn' (Rabinow and Sullivan 1987) and 'the cognitive revolution' (Powell and DiMaggio 1991). To clarify the situation, Scott and Meyer (1994) present a typology of studies characterizing contemporary institutional analysis based on three distinctive elements:

- The type of theoretical model used (Mohr, 1982): variance approaches (which institutional factors influence the observed outcomes) and process approaches to the emergence and diffusion of institutional elements (focus on final causes: how did it happen?);
- The objective of the study: institutional factors, the creation of processes, the evolution of processes such as reproduction or diffusion...etc;
- The level of the study: intra-organizational (that of our research), organizational field, societal level.

Twelve categories of studies were thus defined, six of which were for variance and process theories respectively. Among them, four are particularly interesting in the context of the research.

The first category of variance theories examines the consequences of institutional factors in organizations. For example, Zucker (1977) demonstrated that the more institutionalized role differentiation between participants was, the more subjects adopted and maintained responses consistent with expectations. The second type of study focuses on intra-organizational factors that give rise to institutionalization.

In terms of process theories, the seventh category according to Scott and Meyer (1994) focuses on the diffusion of new organizational structures. The eighth category describes the processes by which institutional forms are generated in organizations. As the authors point out, most studies that examine institutionalization in organizations take a process approach.

At the same time, some institutional theorists emphasize the importance of conformity to the institutional environment for the survival of the organization and in the search for stability (Scott, 1987). It is within this framework that analyses of unchosen 'passive compliance' behavior are developed: here organizations are required to conform to beliefs and practices when these are so externally validated and accepted by the organizations that they become invisible and 'natural' to the actors. Organizations may also sometimes act responsibly without a direct link to outcomes, but because it seems unthinkable to do otherwise (Zucker, 1977).

Compliance may also be a matter of voluntary acceptance in view of various interests that may arise from it, such as the foundation of the company's legitimacy. Other possible benefits may be less explicit, such as the fact that institutional compliance may protect organizations from environmental turbulence (Meyer and Rowan, 1977).

Thus, when the uncertainty of the environment decreases, organizations are more confident about their future acquisition of resources and legitimacy: the stability associated with institutional norms is therefore less sought after. Under these conditions, the manipulation and defiance of pressures is less risky (Oliver, 1991).

In the context of our research, the elements from this theory that will be exploited are factors influencing the degree of recognition or implementation of ecological data at company level.

3. Methodology

In this research, we proceeded with a qualitative case study approach. This interpretive approach consists of an in-depth study of the problem posed through carefully chosen cases and has the advantage not only of presenting a strong dose of contextualization, but also of giving the floor to the various actors. For this work, we collected primary data through interviews and secondary data through document analysis. Using an interview guide developed after an exploratory phase, we collected a range of information relating to the research theme. Semi-structured interviews were conducted with professionals in the environmental field and were transcribed. The information obtained from these interviews was checked and supplemented by document analysis. Our aim was to seek a diversity of perceptions and opinions that would enable us to identify the strategic behaviors adopted with regard to ecological data. The population was made up of industrial companies classified as dangerous, unhealthy or inconvenient operating in various industrial sectors.

The research methodology used in this work assumes that the cases selected are chosen in a justified way, so that they meet the predefined research criteria (Eisenhardt, 1989). For this study, the following aspects were taken into account

- The class of the industry was chosen in accordance with the classification of establishments classified as dangerous, unhealthy or inconvenient. Indeed, the study focuses on industrial enterprises classified as class one. This criterion was adopted after our exploratory study of some industrial structures. We found that in ecological terms, only or at least the vast majority of industrial enterprises that are subject to strict regulations are class one industrial enterprises. Class one establishments are thus considered to be factories, workshops, warehouses, construction sites and, in general, industrial, craft or commercial installations operated or owned by any natural or legal person, public or private, which present or may present either dangers to health, safety, public health, agriculture, nature and the environment in general, or inconveniences for the neighborhood. Thus, it seemed to us that the information sought would be delivered in such an environment.

- The company's field of industrial activity was also retained as a criterion. Indeed, this criterion is taken into consideration to allow not only a diversification but also a representativeness of the industrial sector. Thus, the cases must belong to various industrial fields (brewery industry, wood processing, cement factory, etc.).

The samples of industrial companies meeting the above criteria were drawn up in collaboration with the services of the Ministry of the Environment, Nature Protection and Sustainable Development.

Thus, the cases selected were made according to the table below:

Table 2: The cases of industries studied according to the field of industrial activity

Industrial field of activity	Number of industries obtained	Number of industry cases selected	Percentage in the sample
Agribusiness	23	3	37,5 %
Metallurgy	9	1	12,5 %
Textiles and clothing	5	1	12,5 %
Drinks	11	1	12,5 %
Refinery	9	1	12,5 %
Cement factory	2	1	12,5 %
Total	59	8	100 %

Source: Authors

To select a company, we used the classification of establishments classified as dangerous, unhealthy or unfit for habitation. Only class one companies were selected for our first criterion, i.e. those with strict environmental regulations. On the basis of these class one companies, we made sure that the cases selected were in a wide range of industrial sectors.

However, the selection of a case in a specific industrial field was based on its accessibility according to non-probabilistic sampling. Indeed, it was not easy to gain access to the company and collect the data. Thus, we were able to obtain 8 cases from companies in 6 industrial fields of activity according to the above distribution.

Indeed, the inclusion of a new case of an industrial company in our sample was interrupted when the data became saturated. The information collected during the field investigation was analyzed using the Sphinx IQ software, which brought out a number of facts that led us to characterize ecological behavior.

4. Results and discussion

For an analysis allowing us to highlight the typologies of behavior present in Cameroon in terms of valuing the ecological environment, we based ourselves on the most recurrent criteria of distinction according to the work of Gondran and Brodhag (2003), Martinet and Reynaud (2004), Carroll (1979), Hunt and Auster (1990), Aspe (1992), Heraud and Llerana (1992), Ledgerwood et al. (1993), Louppe and Rocaboy (1995), Hutchinson (1996) and Buttel-Bellini (2003). Thus, we have been able to identify 5 recurring criteria in these different works. These are the following criteria, the degree of importance of which varies from the eco-defensive to the ecologically sensitive, via the eco-conformist: the position of an environmental manager (no manager, part-time, formalized service); the application of regulations (none, identification of the main texts applying to the activity implemented without monitoring, implementation and environmental regulatory monitoring); the perception of ecological investments (cost to be avoided, necessary cost to be minimized, profitable investment); staff awareness of ecological aspects (none, awareness raising posters or other methods without recourse to specific training, formalized training and instructions); the implementation of a strategy including ecological data (none, imposed constraint, opportunity).

Thus, based on the verbatim reports obtained on these different criteria and on the use of the documents made available to us, we were able to identify convergences and divergences between the case studies.

4.1. Convergence of some cases according to the criteria for identifying eco-conformist behavior

According to the different criteria, we were able to list the verbatim and written records that allowed us to qualify certain cases as eco-conformist in certain criteria.

With regard to the first criterion, which is the position of an environmental manager, all the cases (Case A, Case B, Case C, Case D, Case E, Case F, Case G and Case H) have part-time environmental managers based on the different organization charts. The position they hold in the company does not often correspond to a fully-fledged environmental position, but is often combined with other functions. This can be explained by the fact that in large organizations, the environment is more frequently combined with quality, safety or research responsibilities. There is therefore a convergence of the various cases in terms of this criterion.

According to the criterion related to the application of the regulations, 8.3% of the responses provide information in this area. We have identified 5 cases (Case A, Case B, Case C, Case G, Case H) where the managers declare that they apply the texts that apply to their activities, but do not claim to be setting up a watch. Thus, according to the specific verbatim, the environmental managers state that: "The ecological environmental aspect is of primary importance in our company, as we are involved in industrial production and must comply with a minimum number of rules regarding the ecological environment" (Case A); "It is important to respect the rules of the environment and to be aware of the environmental impact of our activities. (Case A); "It is difficult for us to operate without integrating the ecological data with the existence of ecological standards to be respected. (Case B); "As the company is very young, the balance sheet to date remains positive in terms of compliance with the standards for enhancing the ecological environment, despite certain imperfections. (Case C); "Like any processing company in general, the activities carried out by our company are likely to have an impact on the ecology, and it is our responsibility to respect at least the standards established in this respect". (Case G); "In view of the standards that encompass the environmental field, we cannot ignore this aspect in the production of our various products. (Case H); "We deplore the lack of monitoring of regulations at our level due to the absence of a monitoring service that could inform us of any changes in the various environmental standards" (Case H).

Indeed, these cases do not have a monitoring service linked to environmental standards and no document consulted mentions such a service in these cases but rather their efforts to comply with the standards.

The perception of ecological investments is expressed in the following verbatim: "We have sufficient material, human and financial resources, although we sometimes have to put pressure on the management to obtain the necessary financial resources" (Case A); "Our management provides us with financial resources, although sometimes it is difficult for us to work with the budget allocated to us" (Case C); "Our company is like all the others, it seeks above all to make a profit, so the costs linked to the environment are indicators that must be taken into account" (Case E); "Although our service does not add value to the company directly, we at least have financial support" (Case E); "Financial means are always a limiting factor, the budget does not always allow us to meet all our needs" (Case G); "The release of funds is still subject to discussion because it is often perceived as being non-productive. " (Case D).

Thus, for these different cases of companies, ecological investment is perceived as a necessary cost that should be minimized. Indeed, we were not able to identify the perception of ecological investment, but we did find that the financing linked to the ecological aspect was not very significant in the documents consulted in the above cases.

With regard to the criterion of staff awareness, 8.3% of the responses provide us with elements of understanding of the messages sent to staff on environmental matters. Thus, we were able to identify two cases (F and G) that stated that they raise employee awareness through posters or other methods without resorting to specific training. The verbatim demonstrating this awareness-raising is: "Staff awareness is first of all raised by means of television advertisements, and we also post signs enabling employees to see for themselves the level of respect for the environment" (Case F). (Case F); "We usually use meetings and conferences related to environmental enhancement. (Case G). None of the documents consulted in all of these cases mentioned employee training in environmental issues.

Our last criterion concerns the implementation of a strategy that includes ecological data. Indeed, 14.6% of the responses provide information on the latter. We have thus highlighted three cases that claim to have implemented an environmental strategy to respond to ecological constraints. The illustrative verbatim from these cases are as follows: "It is difficult for us to operate without integrating ecological data, with the existence of ecological standards that must be respected" (Case B); "In our business, we have to take into account the environmental impact of our activities. (Case B); "In the structure, the implementation of ecological values is carried out from the general management to the employees, i.e. from the strategic management to the elementary management for a global response to ecological constraints. (Case F); "At present we can say that everything is done without any hindrance insofar as the environmental problem is integrated into the company's strategy. (Case G).

In fact, the ecological aspect is implemented in the strategies of cases F and G insofar as the State is the main shareholder of these different companies. Environmental compliance is therefore one of the objectives of all these cases.

4.2. Convergence of certain cases according to the criteria for identifying ecologically sensitive behavior

With regard to the first criterion, which is the position of an environmental manager, we did not identify any cases with full-time environmental managers on the basis of the various organization charts. The position they hold in the company does not correspond to a fully-fledged environmental position.

As mentioned above, 8.3% of the responses provide information on the criterion related to the application of regulations. We have identified three cases (Case D, Case E and Case F) where the environmental managers state that they implement the regulations and even have an environmental regulatory monitoring service. The verbatim statements in this regard are: "Environmental values are implemented throughout the production process by complying with the environmental standards made available to us by the regulatory monitoring service" (Case D); "At the level of the production process, the environmental managers declare that they implement the regulations and even have an environmental regulatory monitoring service. (Case D); "At the company level, we have taken steps to monitor the evolution of the regulations in force with regard to environmental compliance in order to reduce our environmental impacts" (Case E); "There is a regulatory monitoring service that alerts us to changes or the appearance of environmental standards that must be complied with in relation to the company's production activity". (Case F). The documentary analysis of cases D, E and F did indeed reveal the existence of a regulatory monitoring service.

The perception of ecological investments as profitable investments is shown by the following verbatim: "We also invest in the acquisition of production machines that allow us to reduce not only energy consumption but also to use alternative energies for cost reduction advantages" (Case H); "The financing is also sufficient given the numerous investments made in research and development to improve the quality of the ecological environment and the sums invested in the purchase of new machines for greater profitability. (Case H); "The financing is also sufficient in view of the numerous investments made in research and development to improve the quality of the ecological environment and also the sums invested in the purchase of new machines for greater profitability. (Case B); "In sum, the acquisition of financing related to environmental management remains easy because the company sees this as a profitable long-term investment. (Case F).

On the fourth criterion related to staff awareness, we were able to identify six cases that claim to raise awareness among employees and also train them. Thus, the verbatim statements reflecting staff awareness are: "Employees are mobilized through awareness days and forums or even posters relating to respect for the environment" (Case A); "The employee is required to respect a minimum of environmental rules that are communicated to him/her" (Case B); "The employee is required to respect a minimum of environmental rules that are communicated to him/her" (Case C). (Case A); "The employee is required to respect a minimum of environmental rules which are communicated to him through conferences on the environment, meetings and especially posters". (Case C); "In order to strengthen the cohesion and team spirit of the staff with a view to taking better account of the ecological environment, the company promotes a culture of responsibility among its employees by organizing conferences, awareness-raising days and even goes further by allowing employees to participate in days dedicated to the environment. (Case D); "The mobilization of employees around the environmental aspect is done through awareness posters but also, we do educational meetings to communicate and sometimes prevent certain behaviors. (Case E); "Employees are generally made aware of the importance of the ecological environment through training seminars. (Case B); "The mobilization of staff to achieve the objectives of enhancing the ecological environment is done through training and especially meetings with the managers of each department. (Case H).

Similarly, the verbatim reflecting employee training in these cases are: "Employees are generally made aware of the importance of the ecological environment through training seminars" (Case B); "In addition, it is very difficult to completely change existing machines, which allows employees to improve their skills and they generally benefit from training workshops which are a real asset for environmental compliance. (Case B); "Moreover, it is very difficult to completely change the existing machines, which allows employees to improve their skills and they usually benefit from training workshops that are a real asset for environmental respect. (Case A); "After being selected, the employees will undergo training by specialists and it is after this training that the employee is entitled to work in the field. (Case E); "The mobilization of staff to achieve the objectives of environmental enhancement is done through training and, above all, meetings with the managers of each department. (Case H); "With technology changing all the time, it is important to ensure that employees can acquire skills in the field of technology for better ecological awareness. (Case D).

On the last criterion concerning the implementation of a strategy including ecological data. We have the following verbatim statements in which the managers claim to be implementing an ecological strategy with the aim of obtaining opportunities: "The integration of ecological data is done at our level not only because the State imposes it on us but above all because we are aware that this aspect remains important for the brand image of our company" (Case H). (Case H); "By introducing ecological data into our strategy, we aim to be a reference in this field one day. (Case C); "I believe that in the future, the enhancement of the ecological environment will become one of the main objectives of our company, given the place it already occupies in our strategy, and the future will be bright given the benefits we are beginning to obtain. (Case A); "The future of environmental enhancement in our company is very promising as this aspect has long been part of the company's strategy and this will not change in the near future due to the opportunities it offers us. (Case D); "In fact, environmental data is integrated into the company's strategy, which seeks to highlight its environmental potential for a brand image. (Case E).

In sum, for the five criteria, the majority of the cases have an eco-conformist behavior on the first, second and fourth criteria. These criteria show that the companies have been made aware of the need to integrate the environment. According to the fifth criterion, the majority of the cases have an eco-defensive behavior. In the two behaviors identified above, some company cases have converging views according to the criteria in each type of behavior. However, it should be noted that depending on the criteria and the type of behavior, these cases have totally divergent views. Thus, according to the criteria and the type of behavior, we have summarized the convergent and divergent cases in the following table:

Table 3: Convergence and divergence of cases according to behavioral differentiation criteria

Criteria	Divergent cases following the criteria	
	Converging cases according to the criterion related to eco-conformist behavior	Convergent cases according to the criterion of environmentally sensitive behavior
The place of an environmental manager	Part-time: Case A, Case B, Case C, Case D, Case E, Case F, Case G and Case H	Full-time: none Case
The application of the regulation	Apply without a watch service: Case A, Case B, Case C, Case G and Case H	Apply with watch service: Case D, Case E and Case F
The perception of green investments	Necessary cost to be minimized: Case A, Case C, Case E, Case G and Case D	Profitable investments: Case H, Case B and Case F
Raising staff awareness of environmental issues	Awareness raising without specific training: Case F and Case G	Formalized training and instructions: Case A, Case B, Case C, Case D, Case E and Case H
The implementation of a strategy including ecological data	Constraint imposed: Case B, Case F and Case G	Opportunity: Case H, Case C, Case A, Case D and Case E

Source: Authors

The companies belonging to the group that did not respond favorably to our research are likely to be eco-defensive companies, but the lack of information on these companies makes it impossible to validate this assumption. Nevertheless, the approach to these companies generally allowed us to detect a rather low level of ecological awareness, which may be indicative of attitudes that are not very sensitive to the subject.

The three basic strategic behaviors can, of course, be complemented by other behaviors in multiple combinations. For example, there may be companies that go beyond the legal requirements without having this objective at the outset, sometimes without even knowing it. Others may claim to be environmentally friendly by enhancing their image through public participation in trade fairs and events, without complying with the legislative standards applicable to them. This type of management is rare, however, because controls are becoming better organized; moreover, it is not part of a long-term vision of the company. With regard to eco-defensive, eco-conformist and eco-sensitive behavior, these refer to distinct ecological development strategies. While the eco-defender sees no strategic interest, other than that of limiting financial risks, the eco-conformist limits himself to complying with legislation in order to preserve his image while minimizing the costs of taking the ecological environment into account, and the eco-sensitive person believes that ecological development is likely to generate positive effects on both the strategic and organizational levels.

Indeed, the results show that it is difficult, if not impossible, in the Cameroonian context to characterize with certainty the strategic behavior of a company with regard to the ecological environment. The elusive nature of the ecological behavior of industries is therefore more apparent. Indeed, there is no case that presents an eco-conformist or ecologically sensitive behavior on all five criteria retained. There is thus a break with the basic strategic behavior typologies evoked by Martinet and Reynaud (2004), Carroll (1979), Hunt and Auster (1990), Aspe (1992), Heraud and Llerana (1992), Ledgerwood et al. (1993), Louppe and Rocaboy (1995), Hutchinson (1996) and Butel-Bellini (2003).

Conclusion

The debate between reformist and radical ecologists, which is what we are talking about here, is obviously not about to end. In fact, it seems likely to get tougher. In any case, the stakes in this debate are high, since it is a question of knowing whether the problems raised by ecology are ultimately just a technical issue that liberal capitalism can resolve without having to question itself, or whether they ultimately imply another choice of society, i.e. a profound transformation of the social organization and way of life that dominate today. The objective of this article was to highlight the typologies of strategic behavior of Cameroonian industrial companies with regard to ecological data. By basing ourselves on a set of criteria that allow us to arrive at the basic typologies of strategic behavior in terms of taking the ecological aspect into account, we were able to note the oscillation in the behavior of companies between eco-conformist and eco-sensitive, thus showing the elusive character of ecological behavior. It is therefore difficult to specify the strategic behavior adopted by Cameroonian industries with regard to the ecological environment.

Like any human work, this study has its limits, which must be revealed. We shall therefore highlight those inherent in the phenomena studied and in the methodology. Indeed, the research would have been more interesting if the influence of factors external to the company on the valuation of the ecological environment had also been studied. It was also unfortunate that the results did not include the testimony of industrial companies that were unaware of the ecological environment. The differences between the companies that are aware and those that are highly aware are less meaningful than those resulting from comparisons between companies that are aware and those that are not. However, there are methodological limitations relating to the geographical area of research. Indeed, our study was limited to two cities in Cameroon, namely Douala and Limbe. However, extending our field of study to other cities would have made it possible to obtain a more representative sample of cases and more conclusive results. Far from undermining the credibility of this research, and therefore of the results obtained, these limitations are an eloquent justification of the need to extend this research. However, the answers to these limitations could be found in the future directions of this research. Indeed, this work opens up interesting research perspectives. Thus, the study can be oriented in the same direction, but by highlighting the factors external to the company that influence their ecological behavior. In this sense, the researchers could focus on studying the impact of the consumer's ecological behavior on the consideration of the ecological environment of industrial companies. However, one could go beyond this mechanism of influence of internal or external factors to the company and address other aspects such as

- Longitudinal analysis of environmental management in the company: it would be interesting to study the changes in the integration of ecological data over time, depending on the internal and external context of the company. This would require continuous monitoring of the company over a minimum period in order to detect the main changes in its practices and values.
- Analysis of the integration of ecological data into the quality approach: The approach to quality management and the environment are similar. As a result, their simultaneous treatment

seems more relevant than a treatment done in a dissociated way, hence the interest in studying the integration of the environment in the quality approach.

- The development of tools to help integrate the environment: In view of the elements highlighted by the research, and what has been observed at the level of industrial sites, the integration of ecological data is not obvious and requires synthetic and effective management tools that can be handled easily and quickly, thus limiting the investment in time for the company.

In addition, in order to gather information on companies that have not been made aware of the issue, it is recommended that a more comprehensive survey be carried out, integrating, among other things, the environmental aspect.

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