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BARRIERS AND PRACTICE CONFIGURATIONS OF CORPORATE GREEN MANAGEMENT: EVIDENCE FROM SEMI-STRUCTURED INTERVIEWS WITH OPERATIONAL MANAGERS

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Abstract. Survey measures of green management assume that firms either adopt practices or do not, and that the obstacles they face are resource constraints. Interviews with twenty-four operational managers in eighteen firms suggest a more structured picture. Practices cluster into four configurations that differ on two axes, the depth of adoption and the degree of integration into routines and budgets: ceremonial, conformance, efficiency and market-seeking. The configurations are not stages of a single maturity curve; firms move sideways between them when ownership changes or when a customer imposes a requirement. Reported obstacles are concentrated at the institutional level rather than the individual one, and the most frequently cited barrier is ambiguity about what compliance requires, not lack of funds. What managers describe as an implementation problem is often a translation problem: a policy signal arrives without an operational equivalent, and the firm responds with a document rather than a rule.
Keywords: corporate green management; qualitative research; semi-structured interview; practice configuration; implementation barriers.

Annotatsiya. Yashil boshqaruv bo‘yicha so‘rov o‘lchovlari odatda amaliyotning mavjud yoki mavjud emasligini qayd etadi va to‘siqlarni resurs cheklovi deb talqin qiladi. O‘n sakkiz korxonada yigirma to‘rt operatsion menejer bilan o‘tkazilgan suhbatlar boshqacha manzarani ko‘rsatdi. Amaliyotlar ikki o‘q bo‘yicha — o‘zlashtirish chuqurligi va kundalik jarayonlar hamda byudjetlarga integratsiya darajasi — farqlanuvchi to‘rt konfiguratsiyaga guruhlanadi: marosimiy, muvofiqlik, samaradorlik va bozorga yo‘naltirilgan. Ushbu konfiguratsiyalar yagona yetilish egri chizig‘ining bosqichlari emas. Eng ko‘p tilga olingan to‘siq mablag‘ yetishmasligi emas, balki talabning operatsion ko‘rsatkichga aylantirilmaganligi bo‘lib chiqdi.
Kalit so‘zlar: korporativ yashil boshqaruv; sifatli tadqiqot; yarim tuzilgan intervyu; amaliyot konfiguratsiyasi; joriy etish to‘siqlari.

Аннотация. Опросные измерения зеленого управления обычно фиксируют наличие практики и объясняют препятствия нехваткой ресурсов. Интервью с двадцатью четырьмя операционными менеджерами в восемнадцати компаниях показали более сложную картину. Практики образуют четыре конфигурации, различающиеся по двум осям — глубине внедрения и степени интеграции в рутины и бюджеты: церемониальная, комплаенс, эффективностная и рыночная. Это не стадии единой кривой зрелости. Наиболее частое препятствие — не отсутствие средств, а отсутствие операционального эквивалента требования: сигнал политики приходит без операционной формы, и компания отвечает документом вместо правила.
Ключевые слова: корпоративное зеленое управление; качественное исследование; полуструктурированное интервью; конфигурация практик; барьеры внедрения.

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INTRODUCTION

Ask a plant manager why her firm has not done more on environmental performance and the answer is usually a resource story: no budget, no specialist, no time. Ask a second question about what she would do with a modest budget and the answer often changes. The constraint turns out to be uncertainty about what is being asked, or an inability to demonstrate that a change worked. Resource explanations are true and incomplete, and the gap between the two answers is where this paper sits.

The literature has documented barriers in some depth, but mostly as inventories. Studies of green offices, green buildings, green manufacturing and green human resource practices produce lists that overlap heavily: cost, awareness, expertise, supplier capability, weak regulation, management support [1-4]. Lists of this kind are useful for practice and awkward for theory. They treat barriers as independent items that a firm either has or lacks, and they say little about why the same barrier is decisive in one firm and negotiable in another.

A second body of work is more useful for our purposes. Research on decoupling shows that firms adopt the visible elements of an environmental programme while leaving operating routines untouched, and that this gap is not simply hypocrisy; it follows from the structure of what organisations are asked to demonstrate [5, 6]. Work on strategic responses to institutional pressure makes a similar point from the other direction: firms can comply, compromise, avoid or manipulate, and the choice depends on how the demand is framed [7]. Read together, these strands suggest that barriers should be studied as a property of a configuration rather than as attributes of a firm.

We therefore asked managers not what obstacles exist but how work actually gets organised around environmental objectives: who holds the problem, what evidence counts, which decisions change, and where the process stops. Twenty-four semi-structured interviews in eighteen firms produced four practice configurations and a barrier map that is skewed toward institutional rather than individual factors. The account below is deliberately concrete, because the value of qualitative work in this area is to specify mechanisms that a survey can then count.

PRACTICES AS CONFIGURATIONS

A configuration, in our usage, is a stable combination of practices, decision rules and accountability arrangements that hang together. The idea is institutional rather than psychological: practices diffuse because fields reward conformity [9], firms answer demands by complying, compromising or avoiding [7], and legitimacy is managed rather than simply possessed [10, 11]. The natural-resource-based view supplies the technical counterweight, treating such routines as capability [12], and Delmas and Toffel [9] show that a single stakeholder demand reaches different functions in different forms. The concept carries one assumption: the elements of a green programme are interdependent, so their effects cannot be read off one at a time. A firm with metering but no accountability

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will produce data that nobody uses. A firm with accountability but no metering will produce commitments that cannot be verified. Neither is well described by a count of practices adopted.

Two axes organise the differences we observed. The first is depth of adoption, meaning how far a practice has moved from declaration to routine: whether it appears in a document, in a procedure, in a budget line, or in a decision that someone can be held to. The second is integration, meaning whether environmental criteria are embedded in the processes that already allocate resources, or whether they run in parallel through a separate environmental function. The axes are related but distinct. A firm can adopt a practice deeply within a narrow function and still fail the integration test, and it can integrate environmental language into many processes without changing what those processes actually reward.

This framing explains why the barrier inventories in the literature travel poorly. A barrier such as 'lack of expertise' has different consequences depending on the configuration. Where environmental work sits in a separate function, expertise shortage means the function is understaffed. Where it is distributed across operations, the same shortage means line managers make environmental decisions without knowing what the trade-offs are, which is a different problem with a different remedy.

Chinese survey work maps onto this distinction more closely than its reporting style suggests. Studies find that institutional pressure raises green strategy adoption and that the three pressures operate through different mediators, that supply-chain practices affect sustainable performance through social capital and green innovation, and that dual green strategic orientations interact in their effect on performance. What these designs cannot show is how a manager decides which orientation applies, which is the question the interviews were designed to answer.

METHOD

Design and sampling.

The study uses a multiple-case, embedded design in the tradition of Eisenhardt and Graebner, with the firm as the case and the informant as the embedded unit. Firms were selected purposively against four criteria: at least one environmental initiative underway, more than fifty employees, operation in a sector with material environmental exposure, and willingness to allow two interviews where possible. Case boundaries follow Yin, with the firm as the unit and the environmental decision as the sub-unit of analysis. Sectors covered food processing, construction materials, textiles, metal fabrication, logistics, and one hotel group with a documented resource-efficiency programme. Eighteen firms agreed to take part between March and September; six of them provided two informants, giving twenty-four interviews.

Informants were chosen for operational visibility rather than seniority alone: plant directors, environment-health-safety managers, procurement heads,

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maintenance engineers, and three general managers in firms small enough that the role overlapped with ownership. The median tenure was seven years, which matters because several informants could describe decisions that predated the current sustainability programme and could say what had changed.

Interviews lasted between forty-two and ninety-six minutes, averaged sixty-eight, and followed a protocol in four blocks: the firm's environmental history, a walk-through of two specific decisions the informant had been involved in, the evidence used to judge whether a change worked, and the points at which the process stopped. The third block produced most of the material reported here. Where a firm supplied internal documents, such as environmental procedure notes, supplier scorecards or management review minutes, they were used to check factual claims. Twenty-nine documents were reviewed in eleven firms.

Table 1

Informant and firm profile

Firm	Sector	Employees	Informant role	Minutes
F01	Food processing	180	Plant director; EHS manager	74; 61
F02	Food processing	95	General manager	82
F03	Construction materials	240	Operations manager	66
F04	Construction materials	120	EHS manager; procurement head	58; 63
F05	Textiles	310	Plant director	71
F06	Textiles	140	Maintenance engineer	54
F07	Metal fabrication	420	Operations manager; EHS manager	77; 69
F08	Metal fabrication	85	General manager	96
F09	Logistics	260	Fleet manager	49
F10	Logistics	150	Operations manager	62
F11	Hospitality group	390	Facilities director; procurement head	73; 57
F12	Food processing	70	Owner-manager	88
F13	Construction materials	190	Quality manager	51
F14	Textiles	200	Production manager	65
F15	Metal fabrication	160	EHS manager	59
F16	Logistics	110	Depot manager	42
F17	Hospitality group	230	Facilities engineer	56
F18	Food processing	330	Plant director	70

Analysis.

Interviews were transcribed verbatim and coded in three rounds, using the thematic procedure of Braun and Clarke [13] within the Gioia procedural convention [14]. First-order coding stayed close to informant language, using in-vivo labels such as 'nobody owns the number' and 'the report is for the ministry'. Second-order coding grouped these into themes about accountability, evidence, decision rules and supplier relations. Third, we constructed the configuration typology by arraying each case against the two axes and examining which second-order themes clustered together. Coding was done by two researchers;

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disagreements were resolved by re-reading the transcript segment rather than by averaging codes, and eleven segments remained ambiguous and are reported as such.

Three practices guarded trustworthiness. Each case was written as a one-page summary and sent to the informant for correction; five summaries were revised, mainly on factual details. Negative cases were actively sought, meaning firms whose practice profile did not fit the emerging typology, and two such cases (F08 and F16) forced a revision of the integration axis. Quotations used below were translated by the authors and checked by a bilingual colleague; square brackets mark editorial insertions.

FINDINGS

Four configurations. Figure 1 arranges the eighteen firms. The vertical axis is depth of adoption, the horizontal axis integration. Four configurations emerged, and the labels are ours rather than the informants'.

The ceremonial configuration, low depth and low integration, contains four firms whose environmental activity consists of documents produced for external audiences. A facilities engineer in F17 described the pattern precisely: 'The report is for the ministry. The numbers come from the utility bills and someone writes two pages. Nobody reads it inside the company.' Ceremonial firms are not indifferent to environmental performance; they are organised around demonstration rather than operation, and their staff know the difference. Asked whether the reporting figures were used in planning, the same informant laughed and said the planning meeting had never had an environmental item on the agenda.

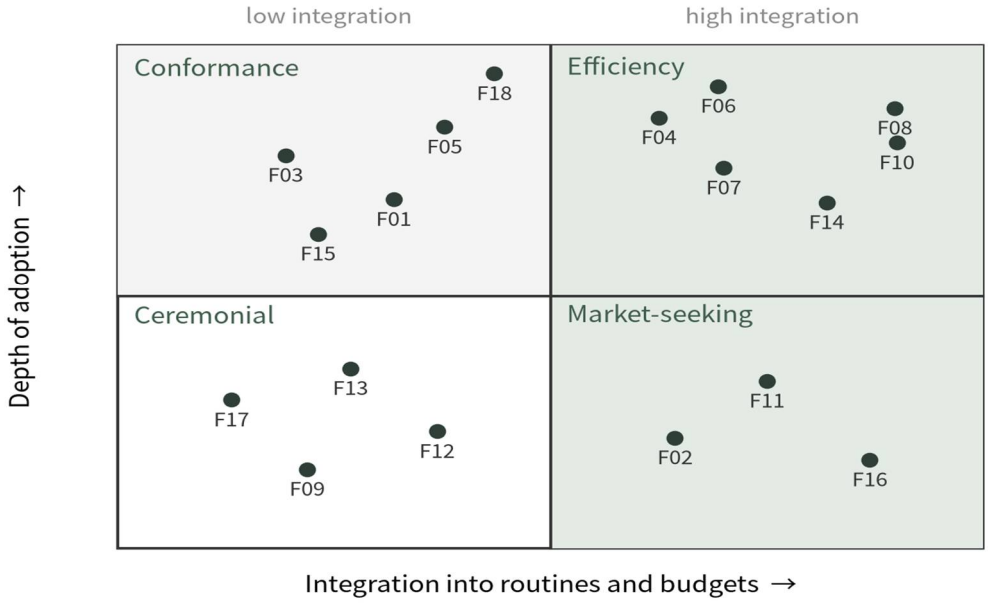

Figure 1. Practice configurations across eighteen firms. Positions are based on coded interview material and internal documents; firms near a dividing line are cases where informants disagreed about the firm's own practice

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The conformance configuration, high depth but low integration, contains five firms that do what the permit or the customer audit requires, thoroughly and without extension. A plant director in F01 explained that the environmental management system was well maintained because an audit failure would stop shipments: 'We are very good at the things that are checked. The things that are not checked do not exist.' Depth here is real but bounded. Conformance firms often hold better records than efficiency firms, which is a useful reminder that documentation quality and substantive performance are separate dimensions.

The efficiency configuration, high depth and high integration, contains six firms where environmental criteria have been absorbed into cost control. Maintenance engineers and procurement heads in these firms speak about energy and material use in the same vocabulary as they use for yield and downtime. F07's operations manager: 'We did not start with a sustainability strategy. We started with the electricity bill, and then someone asked why we were throwing away material we had already paid for.' The driver is economic, and the environmental result is a by-product that is then managed deliberately. These firms were the least likely to describe cost as a barrier, which is not because they have more money but because their projects have short paybacks that survive a capital committee. Survey evidence from other settings points the same way: moral motivation can be the stated driver while financial viability still gates action.

The market-seeking configuration, low depth but high integration, contains three firms, including one hospitality group, where environmental criteria enter customer-facing and procurement decisions without deep operational change. A procurement head in F11 described rewriting a supplier questionnaire to include environmental items while acknowledging that the score carried no weight in award decisions: 'It is in the form. It is not in the decision.' This configuration is unstable. Two of the three firms had moved toward efficiency after a customer or an investor asked for evidence that the claims were supported.

Two observations cut across the typology. First, movement between configurations is not a maturity sequence. F08 moved from conformance to efficiency after a change of ownership, and F16 moved from ceremonial to market-seeking after a customer audit; neither passed through an intermediate stage. Second, the configurations differ in what counts as evidence. Conformance firms rely on external audit, efficiency firms on internal measurement, ceremonial firms on templates, and market-seeking firms on customer perception. Since evidence conventions shape which practices get funded, they are part of the configuration rather than a neutral administrative detail.

The barrier profile. Coding produced twenty-nine first-order codes, grouped into ten second-order themes and three levels. Table 2 reports the structure with the number of informants who raised each theme; Figure 2 shows how the themes distribute across levels.

The distribution is the finding. Institutional-level themes were raised by more informants than organisational or individual ones, and the single most cited barrier was ambiguity about what compliance requires, mentioned by twenty-

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one of twenty-four informants. This is not the 'weak regulation' item that appears in barrier inventories. Informants were not asking for more rules; they were describing an inability to convert an existing rule into an operational requirement. A construction-materials operations manager in F03 put it as a problem of translation: 'They tell us to reduce dust. Reduce it to what, measured where, over what period? If I cannot answer that, I buy a water cart and we call it done.'

Table 2

Barrier taxonomy with code frequency (k = 24 informants)

Level	Second-order theme	First-order codes	k
Institutional	Regulatory ambiguity	no operational threshold; unclear measurement basis; contradictory inspection practice	21
Institutional	Absent market intermediation	no green procurement weighting; no recognised certification; customer asks for documents only	14
Institutional	Fragmented authority	environment, industry and local inspection split across agencies	9
Organisational	Cost and payback rules	payback threshold excludes efficiency projects; no ring-fenced budget	18
Organisational	Capability gap	no environmental engineer; line staff untrained; external consultants used once	14
Organisational	Data and measurement	utility data at building level only; no sub-metering; no baseline	15
Organisational	Supplier dependence	single-source suppliers; no leverage; specifications set upstream	9
Individual	Middle-manager indifference	environmental goals absent from appraisal; promotion tied to output	12
Individual	Role ambiguity	environmental task assigned informally; no named owner	9
Individual	Professional identity	environmental work seen as peripheral to engineering competence	4

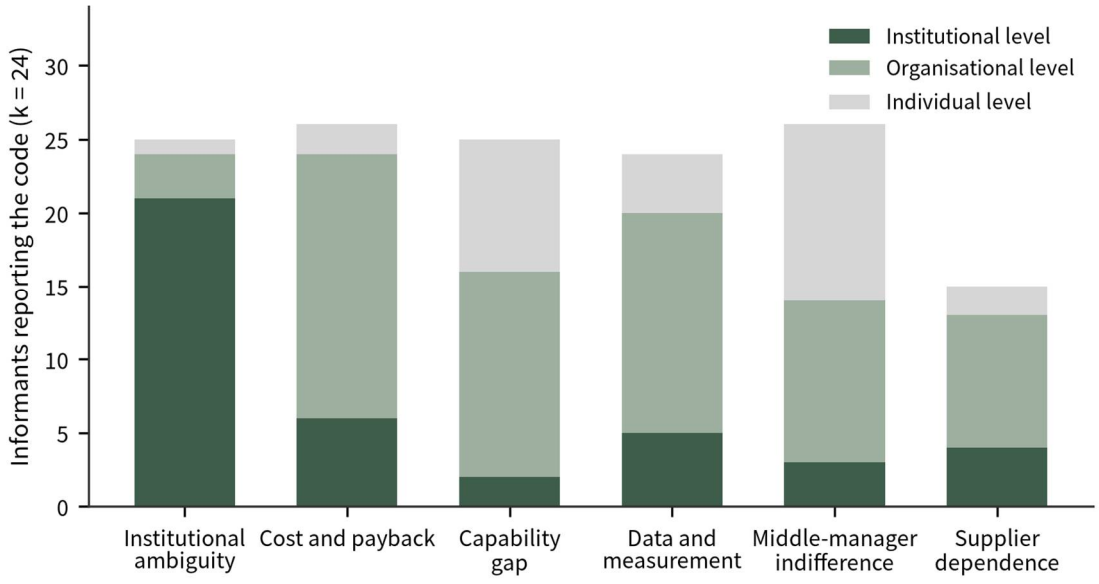

Figure 2. Reported barriers by level. Bars are the number of informants raising at least one code within each theme; themes are ordered by total frequency

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The inventory literature is broad and the codes above overlap with it: circular-economy inertia [16][17], green manufacturing in emerging economies [18][19], environmental management in smaller firms [3][20], supply-chain communication that does not reach operations [21], deliberate under-reporting in SMEs [22], line-manager translation of green human resource practices [4][23][24], and managerial assumptions that sustainability work is unglamorous and long-payback [25]. What the inventories rarely do is state which barrier dominates under which configuration, and that is where our contribution sits.

Two contrasts with the existing literature are worth stating. Cost appears as a barrier in eighteen interviews, but in eleven of those the cost objection was tied to a payback rule rather than to the absence of funds: the project could be financed, but not within the eighteen-to-thirty-six month window that the capital committee applied. The rule, not the money, was the constraint. Second, individual-level barriers were the least cited, and where they appeared they were connected to appraisal systems rather than attitudes. A maintenance engineer in F06 said he had proposed a compressed-air leak survey twice and stopped proposing it: 'It is not in my objectives. If it works, the saving goes to a cost centre that is not mine.' Indifference of this kind is structural, and it survives exhortation. Work on employee green behaviour makes a related point from the individual side: discretionary effort responds to what is recognised and measured, not to declared commitment.

The translation gap.

Across configurations, the recurring mechanism was a break between the level at which an environmental requirement is stated and the level at which operational decisions are made. We call this the translation gap. It has three components, and they appear together often enough to be treated as one mechanism.

The first is the missing operational equivalent. A requirement such as 'reduce emissions' has no direct counterpart in a maintenance schedule, a procurement specification or a capital template; someone has to construct that counterpart, and in most firms nobody is assigned the task. Where it is constructed, it is usually because an individual took it on informally, which makes the practice fragile: three of the efficiency firms attributed their progress to one engineer who had since left or was due to retire.

The second is the evidence vacuum. Informants repeatedly described being unable to tell whether a change had worked. Utility data arrived at building level, twelve months late, aggregated across production lines; a project that reduced compressed-air losses could not be distinguished from a change in output mix. Under these conditions the rational response is to prefer projects whose savings appear on an invoice, which biases adoption toward procurement and away from process change.

The third is accountability diffusion. Where environmental responsibility is assigned to a committee or to a function without budget authority, the requirement travels but the authority does not. A general manager in F02

described the outcome: 'Everybody agreed it was important. Nobody had to do anything.' Diffusion is not the same as neglect; it is what happens when a cross-cutting objective meets a functional organisation.

Propositions.

The material supports four propositions, stated here in a form that a survey can test.

P1. Depth of adoption is predicted by the presence of an operational equivalent (a named decision point with a threshold), not by the intensity of the external demand. Firms facing strong demands but lacking a decision point sit in the ceremonial or conformance configuration.

P2. Integration is predicted by whether environmental criteria enter resource-allocation rules. Where the capital committee's payback threshold excludes efficiency projects, integration remains low even when depth within a function is high.

P3. Institutional ambiguity raises the probability of symbolic adoption independently of firm resources, because it removes the possibility of demonstrating that a practice worked.

P4. Configurations change by substitution rather than by progression: a shift in ownership, customer requirement or measurement capability moves a firm between configurations without passing through intermediate stages.

DISCUSSION

Three implications follow. For the barriers literature, the inventory approach should be retired in favour of a structural account. If the dominant barrier is ambiguity about what compliance requires, then programmes that add requirements without adding operational specifications will produce documentation, not abatement. That is a familiar finding in regulation research and it has not been carried into firm-level green management work.

For the decoupling literature, our cases suggest that decoupling is often an organisational accomplishment rather than a moral failure. Ceremonial firms are staffed by people who know the report is not used; they produce it because the alternative is an audit finding or a lost order. Explaining decoupling as intentional impression management misses the constraint that produced it. The policy implication is unflattering: transparency requirements generate their own paperwork unless they are coupled to decision points.

Chinese evidence points in the same direction from a different starting point. Greenwashing has been described as an isomorphism produced by field-level imitation , disclosure mandates have been shown to shift behaviour unevenly across firm types, identity-based mechanisms carry part of the normative signal , and declared environmental responsibility has been found to diverge from employee behaviour in the same firm . None of these studies uses the configuration frame, and all of them describe a version of the translation gap.

For measurement, the typology clarifies what a depth-scored instrument should be able to detect. A firm in the conformance configuration will score high

on governance and documentation items and moderate on operations; a ceremonial firm will score low on both but may score on reporting. If items are written at the level of declarations, all four configurations collapse into one score. This is the practical reason for anchoring items in artefacts such as meters, scorecards and review agendas, as proposed in the companion scale-development paper.

LIMITATIONS AND CONCLUSION

The study is limited by its sample and by its reliance on managerial accounts. Eighteen firms in one country cannot support generalisation, and the sectors were chosen for exposure rather than for representativeness. Informants may have presented their firms as more deliberate than they are, although document checks and the negative-case procedure reduced this risk. The typology is a researcher construction; firms do not recognise themselves in these labels, and the boundaries between conformance and efficiency are partly a matter of which evidence convention dominates.

What the material does support is a shift of attention. Green management in these firms fails less often at the point of intention than at the point of translation, where a requirement has to become a threshold, a schedule or a line in a capital request. Programmes that address intention, through awareness campaigns or voluntary commitments, leave that step untouched. Programmes that build the operational equivalent, even modestly, appear to move firms further.

Data note. Firms and informants are anonymised. Quotations are translated from interview transcripts and were checked by a bilingual colleague; square brackets mark editorial insertions. Case summaries were returned to informants for factual correction before analysis was finalised.

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