

Mapping the Landscape of ESG Integration in Project-Oriented Workplaces: A Cross-Sectional Analysis of Professional and Organizational Readiness

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Abstract: This paper investigates the conditions under which Environmental, Social, and Governance (ESG) principles are integrated into project-oriented environments, with a particular focus on the interplay between individual capacities and organizational structures. Methodologically, the study employs a quantitative cross-sectional survey of 754 professionals across 25 countries, analyzed through descriptive and cross-tabulation techniques. Drawing on a comprehensive cross-sectional survey of professionals from diverse sectors, and organizational types, the study explores how demographic factors (such as gender, age, and education), professional characteristics (including seniority, years of experience, and project management certification), and organizational attributes (such as size, industry, and maturity) shape ESG engagement and implementation. The findings indicate that ESG integration is more developed in large and long-established organizations, where formal roles and proactive strategies are more commonly present. Certified professionals and those in mid- to senior-level positions are more likely to participate in program- and portfolio-level decision-making and demonstrate higher awareness of ESG responsibilities. However, the study also reveals significant gaps in role clarity, especially in smaller or less mature organizations, as well as persistent gender disparities at the executive level. Many respondents report uncertainty about ESG structures or describe fragmented, informal engagement with sustainability practices. By applying insights from institutional theory, human capital theory, and sustainable project management, the study provides a multidimensional understanding of ESG integration and offers recommendations for enhancing individual and institutional readiness for sustainability-oriented project governance. These findings have implications for researchers, practitioners, and policymakers seeking to mainstream ESG practices across project-intensive sectors. This research contributes theoretically by integrating institutional and human capital theory into ESG analysis and practically by identifying readiness gaps and role ambiguity that hinder ESG implementation in project-based settings.

Keywords: ESG integration; human capital; institutional theory; organizational maturity; professional certification; project management; sustainable development; sustainability governance

1 INTRODUCTION

In recent years, the integration of Environmental, Social, and Governance (ESG) principles into organizational practices has emerged as a critical dimension of sustainable business development [1]. As global attention increasingly shifts toward climate resilience, social justice, and ethical governance, organizations are being compelled to embed ESG frameworks into their strategic agendas. However, the extent and quality of ESG integration vary significantly across sectors, organizational sizes, and geographic regions, often shaped by both institutional characteristics and individual professional attributes within the organization [2, 3].

Project-oriented environments, due to their operational structure and temporary nature, present a unique setting for understanding how ESG principles are understood, practiced, and institutionalized [4]. Professionals working in such environments are frequently responsible for initiating change, managing complex stakeholder interests, and balancing economic performance with broader societal and environmental goals. Despite the increasing prevalence of ESG discourse, empirical research on the readiness, roles, and responsibilities of project professionals in driving ESG practices remains limited. In particular, the interplay between demographic characteristics, professional experience, organizational maturity, and the depth of ESG integration is underexplored in large-scale cross-national studies [5].

This study seeks to address this gap by analyzing responses from a comprehensive survey of 754 professionals involved in project-oriented roles across various countries and sectors. The research investigates how individual factors (such as gender, age, education, certification status, and professional seniority), as well as

organizational features (such as size, industry, ESG role definitions, and integration strategies), shape the current landscape of ESG practices. A particular emphasis is placed on exploring patterns of awareness, interaction frequency, and the presence or absence of clearly defined ESG responsibilities within organizations.

Through a multi-layered analysis of cross-tabulated survey data, this paper aims to contribute to the theoretical and empirical understanding of ESG integration by revealing the demographic and structural factors that influence sustainability engagement in project-based contexts. The findings offer critical insights for policy-makers, educators, and organizational leaders seeking to foster a culture of responsible project governance, particularly in sectors where ESG maturity is still developing.

By showcasing the current state of ESG-related roles and practices in diverse project environments, the study provides a foundational basis for future research on institutionalizing sustainability across different layers of project-based work. It also opens avenues for rethinking how professional development and organizational design can support the strategic embedding of ESG in day-to-day project management. While prior research has addressed ESG practices in general corporate contexts, this study uniquely focuses on project-oriented workplaces, which remain underexplored in ESG literature. It fills a key empirical gap by offering large-scale cross-national evidence on how professional and institutional factors jointly shape ESG engagement at the operational and strategic levels.

2 THEORETICAL BACKGROUND

While ESG shares conceptual space with broader sustainability paradigms such as sustainable project

management, corporate sustainability, and SDG alignment, it represents a distinct logic focused on risk-adjusted governance and stakeholder accountability. Unlike traditional sustainability approaches, which often emphasize long-term value creation or compliance with global goals (e.g., the SDGs), ESG frameworks are increasingly embedded in financial, regulatory, and project governance practices. The integration of ESG principles into organizational systems is increasingly recognized as both a strategic imperative and an ethical commitment [1]. ESG frameworks serve not only as instruments of risk mitigation and long-term value creation [6], but also as mechanisms through which organizations respond to societal expectations and institutional pressures [7]. Stakeholder-driven pressures, such as investor expectations and regulatory mandates, are consistently identified as key drivers of ESG disclosure across various sectors [8]. This institutionalization of ESG reflects not only normative pressures but also the strategic integration of environmental and social considerations into core decision-making processes in project environments.

2.1 Institutional Theory and Organizational ESG Maturity

From an institutional theory perspective, organizations tend to conform to dominant societal norms, regulatory expectations, and stakeholder demands to gain legitimacy and reduce uncertainty [2, 3]. In this context, larger and older organizations, due to greater exposure and scrutiny, are more likely to embed structured ESG practices and establish formal sustainability roles [5]. Institutional theory provides insight into how and why organizations adopt ESG practices, often as a means to secure legitimacy within institutional environments, rather than as a reflection of intrinsic ethical commitment. [9]. ESG maturity typically evolves through four stages-basic, developing, defined, and integrated - each characterized by increasing formalization of roles, clearer governance, and strategic alignment with business objectives [10]. Conversely, smaller firms often exhibit informal or ad hoc approaches to sustainability, driven more by founder values or operational constraints than institutionalized systems [11]. Integrating ESG principles with natural resource management has proven especially important for enabling sustainable economic development in such organizations, particularly in contexts where they face increasing environmental demands and regulatory pressures [12]. From an institutional theory perspective, these differences suggest that ESG acts as a new institutional logic - layered upon existing project governance practices - that varies in strength and formality depending on organizational size, age, and sectoral norms.

2.2 Human Capital and Individual ESG Engagement

At the individual level, human capital theory offers a framework to understand how educational background, certifications, and experience shape professionals' engagement with sustainability. Professionals with higher levels of formal education are more likely to possess the cognitive and ethical foundations required for implementing ESG strategies [13]. Integrating ESG principles into organizational culture and workforce

development is essential for aligning business strategies with evolving societal expectations and regulatory demands [14]. Moreover, project management certifications such as PMP or PRINCE2 increasingly incorporate ESG considerations, equipping certified professionals with relevant frameworks and tools [15]. Integrating ESG principles into project management requires both a shift in mindset and an evolution of competencies, particularly among certified professionals who are expected to lead sustainability-driven initiatives [16].

2.3 ESG in Project-Oriented Environments

Within project-oriented organizations, the temporary and dynamic nature of projects presents both opportunities and constraints for ESG integration. Traditional project management has focused on cost, time, and scope, often overlooking sustainability dimensions [17]. However, the emerging field of sustainable project management advocates embedding environmental and social criteria across the project lifecycle, redefining project success to include long-term societal value [18, 19]. The seniority level and role specificity of professionals also influence the depth of ESG engagement. Executives and senior managers typically shape strategic ESG priorities, while middle managers serve as critical conduits for translating these strategies into operational action [20]. Research shows that middle managers play a crucial role in ESG implementation, acting as a bridge between executive strategy and operational execution [21]. Entry-level professionals may have limited influence but can act as change agents when empowered within agile or participatory organizational cultures [22]. Empowering lower-level employees through participatory organizational cultures enables them to become active change agents in ESG initiatives, particularly in agile structures [23].

By situating this research within the frameworks of institutional theory, human capital theory, and sustainable project management, this study seeks to uncover the enabling and limiting conditions for ESG integration in contemporary project environments. Such an approach not only contributes to the literature on organizational sustainability and project governance but also provides actionable insights for leaders aiming to embed ESG principles throughout the project portfolio.

To analytically bridge the micro-level (individual awareness, skills, seniority) and macro-level (organizational maturity, governance structures), we draw upon the micro-macro alignment model. This conceptual lens allows us to interpret ESG readiness not only as a function of isolated factors but as an emergent property of alignment between personal capacities and organizational absorptive capacity for ESG integration. In contexts where this alignment is weak - e.g., highly motivated individuals operating in unsupportive organizational environments - ESG implementation remains fragmented.

3 METHODOLOGY

This study adopts a quantitative, cross-sectional research design aimed at exploring the demographic,

professional, and organizational factors that influence ESG integration in project-oriented environments. The primary data source is the survey, designed to collect detailed insights into how individuals and organizations engage with ESG principles in practice.

3.1 Data Collection

Data were collected via an online questionnaire distributed through professional networks, partner institutions, LinkedIn groups, and mailing lists between October and December 2024. The survey was available in English and targeted professionals engaged in project, program, or portfolio roles across multiple sectors and countries. Participation was voluntary and anonymous, and informed consent was obtained at the beginning of the survey.

The instrument included both closed-ended questions (single and multiple choice, Likert scales) and open-ended questions to capture quantitative indicators and qualitative insights. Key areas of inquiry included:

- Respondent demographics (e.g., gender, age, education)
- Professional background (e.g., seniority level, certifications, years of experience)
- Current roles and functional areas
- Organizational characteristics (e.g., size, industry, years of operation)
- ESG integration status, approach, focus areas, and frequency of interaction
- Existence and definition of ESG-specific roles within the organization

A total of 754 valid responses were included in the final dataset, after removing incomplete or duplicate submissions.

3.2 Sample Characteristics

The sample consists of a diverse group of professionals representing over 25 countries, with the highest concentrations in Central and Eastern Europe. Respondents span various age groups, seniority levels, and sectors, ensuring representation across different professional and institutional profiles. Over 90% of respondents hold a bachelor's degree or higher, with a significant portion possessing formal project management certifications.

Respondents are primarily involved in project-level roles (56%), though a considerable number also operate at the program (22%) and portfolio (11%) levels. Organizations represented in the sample range from micro-enterprises to multinational corporations, and from young start-ups to entities with over 20 years of operational experience.

While the sample is large and diverse, it may reflect some self-selection bias, as participation was voluntary and likely to attract individuals already engaged in ESG discourse.

3.3 Data Analysis

The quantitative data were analyzed using SPSS Statistics 29.0, employing the following techniques:

- Descriptive statistics (frequencies, percentages, means) to summarize the characteristics of the sample
- Cross-tabulations to identify patterns and associations between respondent characteristics (e.g., gender, experience, education) and ESG engagement metrics
- Visualization tools, including bar charts, pie charts, and heatmaps, to enhance interpretability of results
- Tag cloud visualizations generated using WordArt and NVivo for textual responses related to roles, ESG initiatives, and organizational priorities

Open-ended responses were reviewed to extract thematic insights related to ESG strategy, role clarity, and attitudes toward sustainability practices. Qualitative trends were used to support and triangulate the quantitative findings.

3.4 Validity and Limitations

The research design prioritizes external validity through a large and internationally diverse sample. The inclusion of both individual-level and organizational-level indicators allows for a multidimensional analysis of ESG readiness. However, the study has several limitations:

- The cross-sectional nature of the data restricts causal inference and only captures a snapshot in time.
- Self-reported data may be subject to bias, especially regarding ESG role awareness and organizational practices. This may lead to over- or underestimation of actual ESG involvement due to recall bias or social desirability effects
- While the geographic scope is broad, response rates vary by country, which may influence regional representativeness.
- Although the sample spans 25 countries, there is a higher representation from Central and Eastern Europe, which may reflect region-specific institutional conditions and cultural interpretations of ESG. Thus, caution is advised when generalizing findings globally.
- The survey did not explicitly differentiate between strategic, compliance-oriented, or reporting-based interpretations of ESG, which may influence how engagement levels were reported.

Despite these limitations, the study offers a robust empirical foundation for understanding how demographic and professional variables interact with organizational ESG maturity. The findings can inform future longitudinal studies and policy development aimed at strengthening ESG capacities in project-based environments.

4 RESULTS

4.1 Respondent Demographics

The demographic profile of the 754 respondents offers a representative and diverse foundation for analyzing ESG engagement across different professional contexts. A near-balanced gender distribution was observed, with 50.7% identifying as male, 47.1% as female, and 2.3% choosing not to disclose their gender. This gender parity strengthens the generalizability of results across both male and female perspectives in ESG-related project roles.

The age distribution of respondents reveals that the largest share falls within the 25-34 (35.1%) and 35-44

(32.2%) age groups, collectively representing over two-thirds (67.3%) of the sample. This suggests that the dataset primarily captures early to mid-career professionals who are actively engaged in project environments and, potentially, at key decision-making stages for sustainability initiatives.

In terms of educational attainment, over 90% of respondents have completed at least a bachelor's degree, with nearly half (49.9%) holding a master's degree and an additional 13.0% possessing a doctoral degree or higher. This highly educated cohort indicates that the survey reflects the views of professionals with significant intellectual and technical capacities relevant to ESG discourse and project governance.

Cross-tabulations between demographic variables reveal noteworthy trends. For instance, while the 25-44 age group maintains balanced gender representation, older age categories (45+) demonstrate a gradual male predominance. Similarly, educational achievement is relatively gender-neutral at the bachelor and master's levels, though slightly more men than women report holding doctoral degrees. These trends offer a nuanced understanding of how demographic profiles may shape ESG awareness and engagement.

Overall, the demographic characteristics of the sample suggest a knowledgeable, professionally active, and gender-balanced population, capable of providing informed insights into ESG roles and practices across a broad spectrum of organizational and national contexts.

4.2 Professional Background

The professional background of respondents provides critical context for understanding their engagement with ESG principles in project-oriented environments. Respondents were asked to report their seniority level, project management certification status, and years of experience in project-based roles.

The analysis reveals that the majority of respondents occupy mid-level (28.8%) and senior-level (27.9%) positions, followed by those in managerial or directorial roles (18.8%). Entry-level specialists comprise 18.0% of the sample, while executive or C-level professionals represent a smaller segment (6.5%). This distribution suggests that the survey captured a workforce with significant experience and decision-making responsibility - key factors in enabling or inhibiting ESG adoption at the operational level.

Cross-tabulations between seniority and gender reveal important trends. Entry-level positions are slightly more represented by female respondents (53.7%), while the executive level is predominantly male (67.3%). Managerial and director roles are also male-dominated (62.0%), although a balanced distribution is observed at mid and senior professional levels. These findings align with broader patterns of gender disparity at higher organizational levels and highlight the continued underrepresentation of women in strategic leadership roles within the project profession.

In terms of project management certification, a notable 21.9% of respondents reported holding formal credentials such as PMP, PRINCE2, or IPMA. Certification is most common among respondents in managerial, directorial,

and senior roles, indicating a correlation between formal training and career advancement. Among executive respondents, certification prevalence is especially high, reinforcing the perception of certification as a marker of competence and strategic leadership in project governance.

Respondents' years of experience in project-oriented environments also point to a workforce with substantial exposure to project dynamics. Approximately 51% of respondents report 1-7 years of experience, with 22.3% indicating 8-15 years and 17.2% exceeding 15 years of experience. Entry-level specialists largely fall within the 1-3 year category, while senior professionals and managers typically report over 8 years of experience.

The intersection of certification, experience, and seniority presents a clear trend: as experience and seniority increase, so does the likelihood of holding a project management certification. This relationship highlights the role of continuous professional development in shaping ESG-relevant competencies and advancing individuals into roles with greater influence over organizational sustainability strategies.

Moreover, gender-based analysis of experience levels reveals a slight predominance of men in the highest experience bracket (15+ years), while the lower and middle experience ranges remain gender-balanced. This again suggests potential gender-related barriers to advancement or retention in long-term project careers, particularly at senior decision-making levels where ESG integration is most impactful.

In sum, the professional profile of respondents suggests a well-qualified and experienced population, with a solid foundation for engaging in ESG-related initiatives. The relatively high prevalence of certification among those in higher-level roles reinforces the link between formalized professional development and organizational ESG capacity.

4.3 Organizational Context

To understand the institutional environments within which ESG integration occurs, respondents provided data on their organizations' industry sectors, size, years of operation, and the existence of ESG-specific roles. These organizational characteristics offer valuable insight into the structural enablers and barriers to ESG maturity.

4.3.1 Industry Sectors

Respondents represent a diverse range of industries, with the highest concentration in Education (21.1%), followed by Information Technology (13.7%), Financial Services (7.4%), and Engineering Services (6.2%). Other sectors include Healthcare, Manufacturing, Non-Profit/NGO, and Professional Services. This industry diversity enables a comparative understanding of ESG practices across both mission-driven and commercially oriented organizations.

Cross-tabulations reveal notable gender dynamics across sectors. For example, female respondents are more prevalent in the education sector (65.4%), while male respondents dominate IT (56.3%) and engineering (57.4%). These patterns reflect broader trends in occupational gender segmentation and suggest that sectoral

affiliation may influence not only ESG engagement but also the representation of different demographic groups in decision-making roles.

Project management certification prevalence also varies by sector. In industries such as IT and professional services, certification is widespread - 72.8% and 68.4% respectively - indicating a greater emphasis on structured project governance. In contrast, in the education sector, 84.3% of respondents report no formal project management certification, possibly reflecting different professional development priorities or organizational cultures.

4.3.2 Organizational Size and Age

Organizations of all sizes are represented in the dataset: large organizations (251+ employees) account for 32.2%, small organizations (1-50 employees) for 31.3%, medium-sized organizations (51-250 employees) for 21.9%, and microorganizations (1-10 employees) for 14.6%. This relatively balanced distribution allows for comparison across different organizational scales, each with unique resource capacities and governance structures.

The years of operation further reflect the organizational maturity of the sample. Nearly 70% of respondents come from organizations older than 10 years, with 43.0% from institutions older than 20 years. Only 8.9% of respondents work in organizations that have existed for less than five years. This maturity suggests a strong foundation for long-term sustainability strategies, while also highlighting where ESG may be more institutionalized due to historical development and established processes.

4.3.3 ESG-Specific Roles

When asked whether their organization had dedicated ESG-specific roles, responses indicate a fragmented landscape. Only 28.2% of respondents confirmed the existence of such roles, while 38.1% reported that no such roles existed, and 33.7% expressed uncertainty. This high degree of ambiguity suggests that ESG responsibilities may often be informal, distributed, or insufficiently communicated.

The presence of ESG-specific roles correlates strongly with organizational size and age. Larger organizations and those operating for more than 20 years are more likely to report having defined ESG functions. In contrast, micro and younger organizations tend to lack such roles or clarity around them. These findings are consistent with prior research on organizational capacity and the institutionalization of sustainability practices [5,11].

Fig. 1 presents a clustered bar chart illustrating the presence of ESG roles across organizations of different sizes (micro, small, medium, and large) and according to their years of operation (<5, 5-10, 10-20, >20 years). Fig. 1 reveals a clear trend: larger and older organizations are significantly more likely to have formal ESG roles. Notably, organizations operating for over 20 years - especially medium and large ones - show the highest integration of ESG roles, suggesting a strong correlation between organizational maturity and ESG role formalization.

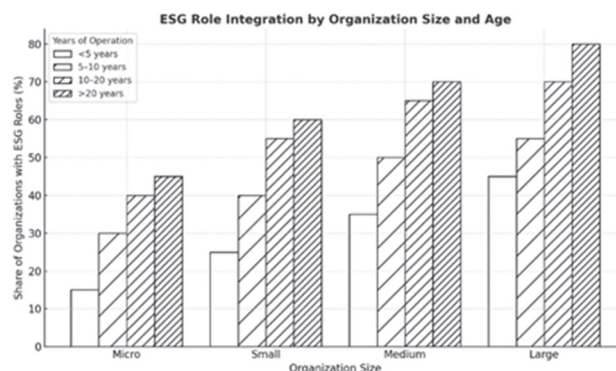


Figure 1 ESG role integration by organization size and age

Empirical studies indicate that larger and older firms tend to exhibit higher ESG performance levels, attributed to their greater resource availability and established governance structures [24]. Recent research confirms that larger and older organizations tend to exhibit higher ESG maturity due to greater resources and stakeholder scrutiny. For instance, a 2022 systematic review found that sustainability practices in most SMEs remain informal and ad hoc, not integrated into core strategy, whereas large firms implement more structured sustainability processes. Thus, smaller companies typically approach ESG in a fragmented manner, whereas larger corporations tend to implement formalized and strategically aligned ESG programs [25]. Scholars describe a clear progression in ESG integration: organizations evolve from reactive, ad hoc measures toward proactive, strategic ESG management as they mature. As one analysis explains, a narrow focus on short-term compliance leads to a reactive (if not ad hoc) approach to ESG, whereas a long-term vision fosters proactive integration of ESG into corporate strategy [26]. The increasing formalization of ESG roles within organizations can be interpreted as part of a broader isomorphic trend, where companies adopt similar sustainability structures in response to institutional pressures, rather than intrinsic values [27]. Open-ended responses provided examples of existing ESG-related positions, including Sustainability Manager, ESG Officer, Environmental Protection Expert, and members of dedicated ESG teams or directorates. Some respondents also described informal roles or individuals "wearing multiple hats", indicating that ESG responsibilities are sometimes embedded within broader operational or strategic functions.

However, several respondents expressed confusion or lack of awareness about ESG roles, while a minority voiced open criticism or resistance to ESG principles. This signals the need for clearer communication, training, and role definition, particularly in organizations that aspire to transition from reactive or ad hoc approaches to proactive sustainability strategies.

The organizational context of ESG engagement is influenced by factors such as industry sector, company size, and institutional maturity. Institutional maturity plays a critical role in shaping the effectiveness of ESG activities, with weaker institutions and information asymmetry potentially hindering the alignment of ESG efforts with innovation goals [28]. While some organizations demonstrate structured ESG governance, many still operate in a state of ambiguity or resistance, underscoring

the necessity for targeted capacity-building and leadership commitment in advancing ESG integration.

4.4 Roles, Functional Areas, and Work Environments

The analysis of current roles, functional domains, and work environments provides insight into the operational context in which ESG principles are (or are not) enacted within project-oriented organizations.

4.4.1 Roles and Organizational Levels

The majority of respondents (56.0%) occupy project-level roles, such as project managers, team leaders, or project team members. An additional 22.0% report serving in program-level roles, while 11.3% operate at the portfolio level, including positions such as portfolio managers or analysts. The remaining 10.7% hold roles that do not fall into these standard categories, including consultants, advisors, and specialists in cross-functional or governance roles.

A cross-tabulation with project management certification status reveals that certified professionals are more frequently situated in program and portfolio-level positions, suggesting that formal training supports career advancement into more strategic and oversight-oriented roles. Among certified respondents, 27.9% hold program-level positions and 18.8% are active at the portfolio level, compared to only 20.4% and 9.2%, respectively, among non-certified respondents. This pattern reinforces the instrumental value of certification for upward mobility in project governance hierarchies and may also influence the level of engagement with sustainability frameworks.

Table 1 Typical ESG role titles by organizational level

Organizational Level	Example Titles	Typical Functions
Portfolio	ESG Director, Sustainability VP	Strategic direction, reporting, governance
Program	ESG Program Manager	Coordination of multiple ESG initiatives
Project	Project Manager, ESG Officer	Implementation, monitoring, reporting
Cross-functional	Advisor, Analyst, Consultant	Support, advising, training

As shown in Tab. 1, ESG responsibilities are stratified across organizational levels, with strategic functions concentrated at the portfolio level and implementation roles prevalent at the project level.

4.4.2 Functional Areas

Open-ended responses regarding functional domains were analyzed through tag cloud visualization, highlighting recurring terms such as "Operations", "Finance", "IT", "Strategy", and "Sustainability". This distribution reflects the multidisciplinary nature of project work and the wide spectrum of contexts in which ESG concerns may emerge.

Notably, professionals working in strategic or operations-focused roles were more likely to report frequent interactions with ESG topics, whereas those in highly technical or back-office roles expressed either lower

engagement or less clarity on ESG integration. This suggests that functional positioning within the organizational structure may mediate the visibility and relevance of ESG efforts.

4.4.3 Work Environments

The data indicate a broad shift toward hybrid work models, with 52.7% of respondents reporting a mix of remote and on-site work. Traditional office settings still account for 31.4%, while 7.6% work fully remotely. On-site fieldwork - such as construction, energy, or environmental monitoring - is reported by 3.7% of respondents. The remaining work settings include co-working spaces, client-based arrangements, and other flexible configurations.

These patterns reflect a broader post-pandemic normalization of hybrid work, particularly among professionals in education, IT, and professional services. Hybrid environments were especially common among mid-level and senior professionals, while entry-level respondents were more concentrated in fully on-site or remote settings, likely due to role-specific requirements or organizational preferences regarding supervision and onboarding.

Cross-tabulations suggest that organizational seniority also influences work setting preferences. Executive and managerial staff show a preference for hybrid models, which may support both strategic collaboration and personal flexibility. Entry-level professionals are more commonly found in structured office environments, while senior professionals demonstrate a greater distribution across work modes.

This data points to the importance of contextual flexibility in ESG practice. The ability to operate across digital and physical environments can enable more inclusive and adaptive approaches to sustainability governance. However, organizations must also be mindful of potential disparities in ESG exposure and involvement based on physical proximity, access to leadership, and function-specific remoteness.

Table 2 Functional areas and frequency of ESG interaction

Functional Area	ESG Interaction Frequency	Nature of ESG Engagement
Strategy	High	Defining ESG priorities
Operations	Medium	Translating ESG into action plans
Finance	Low	Budgeting, risk-related engagement
HR	Medium	Training, inclusion, diversity
IT	Low	Data management, reporting tools

Tab. 2 illustrates that ESG engagement varies across functional areas, with strategy and operations showing higher interaction frequencies compared to finance and IT.

4.4.4 Role Clarity and Professional Identity

Finally, the word cloud of job titles reveals a wide array of professional identities - ranging from "Project Manager", "Director", and "Consultant" to "Sustainability Advisor" and "Impact Analyst". This diversity suggests

that ESG-related work is not limited to formally titled sustainability roles but is embedded across various organizational layers and functions.

While this distributed model of ESG responsibility can support organizational adaptability, it also poses risks related to role ambiguity, accountability gaps, and inconsistent implementation. Respondents frequently noted that ESG-related tasks are "part of a broader role" or "unofficial responsibilities", signaling a need for greater institutional clarity and formalization of ESG competencies within job descriptions and performance frameworks.

ESG engagement is shaped not only by hierarchical position but also by functional role, certification status, and workplace configuration. The findings highlight the fragmented yet widespread nature of ESG activity across professional identities and suggest that formal role definition, ongoing training, and structural alignment are essential for consistent ESG integration.

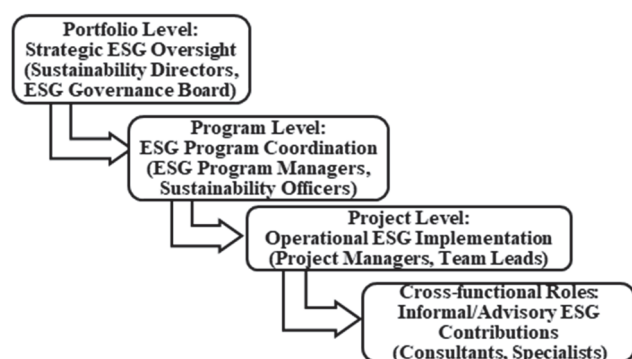


Figure 2 ESG Roles by organizational level

Fig. 2 visually summarizes the distribution of ESG responsibilities across organizational levels, emphasizing the varying depth and formality of ESG engagement from portfolio to cross-functional roles.

5 DISCUSSION

The findings of this study provide a comprehensive snapshot of how demographic, professional, and organizational characteristics shape ESG (Environmental, Social, and Governance) engagement within project-oriented environments. By examining a diverse and well-educated sample of 754 professionals across multiple countries and industries, the study offers nuanced insights into the complex interplay of individual capacities and institutional structures that enable or constrain ESG integration.

5.1 Individual and Professional Enablers of ESG Engagement

One of the most significant findings is the association between professional seniority, project management certification, and engagement with ESG practices. Respondents in program and portfolio-level roles, who are often certified and have extensive project experience, demonstrate higher levels of ESG awareness and strategic responsibility. This confirms prior theoretical assumptions based on human capital theory, which posits that individuals with greater formal education and specialized

training are more capable of engaging in complex, strategic decision-making [13, 15, 29].

The data also support the argument that certifications - particularly in project management - function not merely as credentials, but as gateways to influence, enabling professionals to participate more actively in the governance dimensions of projects, including sustainability. This finding is aligned with literature emphasizing the importance of professional standards in advancing sustainable project practices [17]. Additionally, research by Savković et al. [30], underscores the role of organizational agility and project resilience as complementary dimensions of project success, particularly when sustainability objectives are embedded into dynamic work environments. Their work demonstrates that ESG engagement can benefit from agile structures that enhance responsiveness and stakeholder alignment.

At the same time, the study highlights gendered patterns of career progression, with women underrepresented at the executive level and overrepresented in entry-level roles. While gender parity exists at mid and senior professional levels, the vertical segregation observed at higher echelons suggests persistent structural barriers that limit equal access to ESG leadership opportunities [31]. This finding echoes broader discussions on gender and sustainability governance, where male-dominated leadership may influence which ESG dimensions are prioritized or marginalized [22].

Beyond formal certification, specific skill profiles also play a critical role in shaping ESG competencies. Recent efforts to empirically validate project manager skill dimensions, such as the Project Manager Skills Scale (PMSS) developed by Đajić et al. [32], offer valuable insight into the interpersonal, cognitive, and strategic skills that may underpin successful ESG integration in project governance. These validated constructs can serve as diagnostic tools for identifying development needs and targeting capacity-building efforts [32]. Beyond formal education and sustainability-specific certifications, emerging research suggests that intrapreneurial behavior and agile mindsets also play a critical role in driving transformation toward more adaptive and future-oriented project environments. While not exclusively focused on ESG, such competencies contribute to creating organizational cultures that are open to continuous improvement and aligned with long-term value creation [33].

However, professional certification alone may not be sufficient to drive ESG engagement in the absence of organizational commitment and enabling culture.

5.2 Organizational Maturity and ESG Role Clarity

From an institutional theory perspective, the data confirm that larger and older organizations are more likely to have formal ESG roles and proactive integration strategies. These organizations appear to respond to normative and regulatory pressures more consistently than smaller, younger, or less structured entities [2, 3]. Organizational maturity appears to provide both the structural capacity and the strategic horizon necessary for embedding ESG principles into governance and operations.

A structured framework for assessing and enhancing ESG integration in project environments emphasizes the importance of role clarity and alignment with governance mechanisms, particularly as organizations advance through stages of ESG maturity [34].

However, the study also uncovers a high degree of uncertainty and ambiguity surrounding ESG roles. One-third of respondents were unsure whether their organization had ESG-specific responsibilities, and many reported that ESG tasks were "unofficial" or "part of a broader role". This lack of role clarity presents a significant implementation challenge: without clearly defined responsibilities, accountability for ESG outcomes remains diffuse, weakening the potential for organizational learning and sustained practice.

While formal ESG reporting structures are increasingly adopted, they do not inherently ensure improved ESG performance, highlighting the need for genuine integration beyond compliance [35].

The absence of formal ESG structures in smaller organizations also reflects a potential capacity gap, where limited resources and operational pressures constrain the ability to formalize sustainability practices - even when individual commitment exists. In many small and medium-sized enterprises, ESG implementation is shaped more by organizational culture than by formalized governance structures, resulting in informal, value-driven practices rather than institutionalized frameworks [36]. This highlights the need for context-specific support mechanisms, such as toolkits, policy guidance, and capacity-building programs tailored to the needs of small and medium-sized enterprises. Similar observations have been made in studies exploring post-crisis recovery dynamics, where entrepreneurial capacities at the national level were identified as key enablers of organizational resilience and strategic adaptation [37]. These findings suggest that broader systemic factors - beyond internal ESG structures - may significantly influence an organization's readiness to institutionalize sustainability practices, especially in volatile environments.

These ambiguities underline the importance of not only role formalization but also internal communication strategies and leadership modeling to ensure that ESG principles permeate all organizational levels.

5.3 ESG Integration in Practice: Modes, Focus, and Interaction

The data also show a wide variation in approaches to ESG integration, ranging from proactive and strategic to reactive and ad hoc. Organizations with proactive ESG strategies tend to have higher interaction frequencies, broader ESG coverage (environmental, social, and governance), and a stronger presence in mature industries. These findings support earlier conceptualizations that proactive engagement is a marker of ESG maturity and tends to correlate with internal leadership commitment and external accountability mechanisms [1, 18]. Theoretical integration of ESG principles within project management frameworks is essential for achieving long-term sustainability outcomes [2].

Conversely, the presence of reactive and ad hoc approaches, particularly in mid-aged and less regulated

sectors, points to an ongoing transitional phase in ESG adoption. The substantial number of "Not Applicable" responses suggests that ESG is still perceived as peripheral in certain industries or organizational cultures - despite the growing global emphasis on sustainability. This ambiguity in ESG engagement may also reflect broader capability gaps in organizational agility and adaptability. For instance, Savković et al. [38] highlight how a combination of high-performance work practices, agility, and resilience mechanisms fosters a culture more conducive to sustainability integration, especially in fast-evolving project contexts [38].

The role of hybrid work environments emerged as another interesting dimension. Mid-level and senior professionals often operate in flexible settings that support strategic reflection and cross-functional collaboration, potentially facilitating ESG planning and coordination. However, variability in physical work environments may also lead to differentiated access to ESG-related discourse and training, particularly for those in field-based or junior roles.

Although the survey explored ESG engagement across roles and organizations, the term 'ESG' itself may carry varied meanings for respondents. For some, it may reflect a strategic orientation or a value-driven framework; for others, it may primarily denote regulatory compliance or reporting routines. The observed ambiguity in responses - particularly the high share of participants uncertain about ESG roles - suggests that semantic and operational differences in ESG interpretation persist across organizational contexts. Further research is needed to systematically disentangle these perspectives and understand how ESG is framed within different organizational cultures.

5.4 Implications for Practice and Policy

The results of this study have several practical implications. First, organizations seeking to strengthen ESG engagement must invest in formal role definition and training for project professionals, particularly in sectors where sustainability is not yet institutionalized. Clear ESG roles, aligned with strategic objectives, are critical for avoiding fragmentation and ensuring consistent implementation [39].

Second, certification programs and professional development initiatives should more explicitly integrate ESG competencies, especially for program and portfolio managers who shape long-term project direction. These programs can serve as platforms for mainstreaming sustainability into the project profession.

Third, targeted support for SMEs is needed, particularly those with high operational demands but limited strategic capacity. Policymakers and industry associations can play a vital role in enabling ESG diffusion through sector-specific guidelines and community-based learning initiatives. The fragmented nature of ESG roles also implies the need for ESG competencies to be embedded across all project-related job descriptions, not isolated within standalone roles. This may require the development of standardized ESG skill sets within professional bodies and employer training frameworks.

Finally, the persistence of gender and role-related inequalities in ESG leadership highlights the need for organizational policies that promote inclusive advancement. Ensuring diversity in sustainability governance is not only a matter of social equity but may also enhance the quality and legitimacy of ESG outcomes.

6 CONCLUSION

This study has provided an empirical exploration of the conditions under which ESG principles are understood, practiced, and institutionalized in project-oriented environments. Drawing on survey data from 754 professionals across multiple sectors and countries, the research examined how demographic characteristics, professional backgrounds, and organizational structures interact to shape ESG engagement.

The results reveal that individual factors - particularly professional seniority, certification status, and years of experience - play a substantial role in shaping access to and influence over ESG - related responsibilities. Formal project management training and career progression are positively associated with higher levels of strategic involvement in ESG efforts. However, gender - based disparities persist, particularly at the executive level, suggesting that structural barriers to inclusive ESG leadership remain.

At the organizational level, ESG integration appears most developed in large, mature, and institutionally embedded organizations. These entities are more likely to have clearly defined roles, proactive approaches, and frequent interaction with ESG topics. In contrast, smaller and younger organizations tend to lack formal ESG structures, and many respondents expressed uncertainty about their organization's engagement with sustainability principles. This points to a need for increased institutional clarity, better communication, and targeted support, particularly for organizations in the early stages of ESG adoption.

The findings also underscore the fragmented nature of ESG responsibilities across roles and functional areas. While professionals are increasingly engaged in sustainability-oriented work, the lack of formal role definitions may hinder accountability, performance monitoring, and long-term capacity building.

By situating the analysis within the frameworks of institutional theory, human capital theory, and sustainable project management, this study contributes to a more nuanced understanding of how ESG practices are operationalized in diverse project environments. It also highlights the need for more structured, inclusive, and strategically aligned approaches to ESG integration - both at the individual and organizational level.

Future research should explore longitudinal dynamics of ESG maturity within organizations, examine sector-specific enablers and barriers, and consider the impact of ESG integration on project outcomes. Additionally, qualitative studies, such as in-depth interviews or case studies, could offer deeper insights into how professionals navigate the practical challenges of sustainability governance in their day-to-day work.

As sustainability becomes a defining concern of the project profession, ensuring that ESG responsibilities are

clearly embedded in both professional competencies and organizational systems is not only a matter of ethical commitment, but also one of strategic resilience.

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