**ASSESSING THE** INFLUENCE OF PROJECT **BUDGET ALLOCATION STRATEGIES ON ACHIEVING SUPERIOR** ESG PERFORMANCE **OUTCOMES IN DIGITAL** TRANSFORMATION PROJECTS WITHIN ENVIRONMENTALLY **CONSCIOUS SECTORS** 

## Fangjing Ma<sup>1\*</sup>, Zhouyuan Tian<sup>2</sup>

<sup>1</sup>Dr., SolBridge International School of Business, Woosong University, Daejeon, Republic of Korea, 34613. Lecturer, School of Economics and Management, Liaoning University of Technology, Jinzhou, Liaoning, China, 121001. Email: fma218@student.solbridge.ac.kr

<sup>2</sup>Dr., SolBridge International School of Business, Woosong University, Daejeon, Republic of Korea, 34613. Lecturer, Pujiang Institute, Nanjing Tech University, Nanjing, China, 211200.

Email: z.tian@njpji.edu.cn

DOI NUMBER: 10.19255/JMPM3502

PAGE 17

ABSTRACT: This research aims to explore the existing relationship of project budget allocation strategies and ESG performance outcomes. This research also explores the impact of ESG performance outcomes on digital transformation projects sustainable performance management. Moreover, this research used environmentally conscious sectors as a moderating variable among the direct relationships of project budget allocation strategies and ESG performance outcomes. This research collected data from 329 managerial employees from the Chinese electronics industry. To achieve the aim of this research this study has employed the STATA software with SEM (structural equation modelling) approach. Findings of this research have shown a significant association between direct relationships of project budget allocation strategies, ESG performance outcomes, and digital transformation projects sustainable performance management. Moreover, findings also confirmed that the relationship between these variables is also moderated by environmentally conscious sectors. This study provides empirical evidence on the relationship between digital transformation and sustainability in the Chinese electronics industry. Organizational leaders and policymaker's should include sustainability into strategic decision-making to boost resilience, competitiveness, and long-term value generation.

**Keywords:** Enterprise Digital Transformation, Project Budget Allocation Strategies, ESG Performance, Digital Transformation Projects, Total Factor Productivity, Positive Analysis, Sustainable Performance.

#### 1. Introduction

Recently, there has been an increased focus on the confluence of project management and sustainability. Businesses put a lot of effort into adhering to environmental, social, and governance (ESG) standards (Wang, Chu, & Hao, 2024). This field of study looks at how project management techniques impact sustainability. Sustainable project management considers the implications on society, the environment, and the economy at every stage of the project's lifespan (Hu, Hassan, & Atif, 2024). This all-encompassing strategy tackles the impact of the project on sustainability objectives. The prevailing consensus among individuals is that the integration of sustainability principles into project management is imperative in order to mitigate environmental harm, enhance societal well-being, and uphold financial viability (Pesqueira & Sousa, 2024). The empirical research has looked at how project management techniques impact the results of sustainability projects in a variety of organizational settings and geographic locations (Dathe et al., 2024). Sustainable project management raises stakeholder satisfaction and environmental performance metrics, according to Chen and Zhang (2024). These significant studies (Kandpal et al., 2024a; Rastelli, 2023) show that in order to handle the myriad challenges of today, sustainability must be included into project management frameworks.

Empirical studies have established a connection between sustainability and project management techniques (Liu et al., 2024). Numerous sectors and domains have been the subject of these queries. Environmental performance indicators are improved by environmentally friendly project management, according to the Ray et al. (2024) study. Agile and Waterfall project management techniques were evaluated for sustainability in the Zhu, Xu and Sun (2024) study analysis. Kwilinski, Lyulyov and Pimonenko (2023), findings suggest that Agile techniques, which are more flexible and iterative than Waterfall methodologies, are better at integrating sustainability considerations into project management. Agile iterative methods allow for small adjustments and feedback loops. Project teams can effectively tackle environmental issues and stakeholder expectations in this way (Zhao, Li, & Li, 2023). The Jones et al. (2023) study investigated the relationship between stakeholder participation and societal results and project management techniques. According to their research, some project management techniques can involve stakeholders and optimize societal benefits. Additionally, Yin (2023) research indicated that sustainability should be given top priority in project management systems. Rastelli (2023), conducted longitudinal studies across several sectors. This study looked into what constitutes socially sustainable project management techniques (Rastelli, 2023). Performance evaluation, stakeholder

engagement, and leadership dedication are among the aforementioned. Based on their findings, it is imperative to establish robust connections with government agencies, non-governmental organizations, and local communities in order to address social issues and optimize outcomes (Rastelli, 2023). Academic studies have also looked at how project governance structures support long-term project management practices. investigated environmental sustainability and project governance (Paro, 2023). According to Zhong, Zhao and Yin (2023) research, businesses that have robust governance frameworks that is, roles and duties that are clearly defined, accountability systems, and decision-making procedures are more adept at incorporating environmental considerations into project management.

According to the Zhong et al. (2023) research, governance frameworks are important for encouraging environmental stewardship and incorporating sustainability into project decisions at all organizational levels. Furthermore, studies on sustainable project management have looked at the financial advantages of using sustainable practices (Barykin et al., 2023). Several studies demonstrate that businesses adopting sustainable project management techniques have a higher chance than their rivals of achieving greater long-term value and financial success (Božić, 2023). Kyriakogkonas et al. (2022), looked at sustainable project management businesses' financial results. Profitability and sustainability have a substantial positive correlation, according to statistical analysis (Szóka, 2022). These results strengthen the business rationale for project management techniques that integrate sustainability. These findings suggest that businesses may see financial gains from sustainable project management. Numerous empirical studies have demonstrated the impact of project management techniques on sustainability results (Wang & Hu, 2022). In order to handle 21st-century issues, a recent study (Risso, 2022) highlights the necessity of integrating sustainability into project management frameworks. These components include social ramifications, economic repercussions, and environmental performance measures.

Although previous empirical research has advanced the field of sustainability and project management, there are still gaps in the literature. It is possible to enhance project management frameworks' incorporation of environmental, social, and governance (ESG) aspects (Risso, 2022). While individual elements have been the subject of prior research, enterprises' effective management of environmental, social, and

governance concerns in project management has not been empirically demonstrated (Becchetti, Cordella, & Morone, 2022). Resource use and carbon emissions have been researched in relation to project management techniques. On the other hand, not much is known about how these methods impact project management's social and governance components (Larsen & Strifeldt, 2022). Additionally, not much research has been done on how digital technology enhances the sustainability of project management (Arvidsson & Dumay, 2022). Although big data analytics, block chain, and artificial intelligence have the potential to increase project management effectiveness and efficiency, their influence on sustainability research is still relatively new (Darroll, 2022). Businesses need to comprehend how new technologies can facilitate sustainable project management if they are to leverage innovation for social and environmental impact. Current understanding of project management sustainability performance assessment and evaluation is lacking (Gitau & Sang, 2022). Although there are many frameworks and metrics available for evaluating sustainability projects, there is dispute over the indicators that are relevant to a certain project. The social and governance effects of project management techniques are difficult to quantify (Zahid, 2021). This is concerning since two typical environmental performance metrics used in sustainability reporting are energy consumption and carbon emissions (Patil, Ghisellini, & Ramakrishna, 2021). The long-term impacts of sustainable project management techniques on competitiveness and organizational performance have not received much attention (Virginia, 2021). The strategic implications of sustainable project management must be understood in order to support organizational transformation and advance sustainability.

Project management and sustainability are explained by systems thinking, institutional theory, and stakeholder theory. The stakeholder theory (Shehab, 2021) places a strong emphasis on the value of taking into account the interests and expectations of all parties involved in a project, including the community, suppliers, customers, and employees. Organizational behaviour is shaped by institutional pressures, norms, and values, as highlighted by institutional theory (Ionescu, 2021). In order to address issues comprehensively, systems thinking acknowledges the interconnection of social, environmental, and economic systems. There are two primary theoretical purposes for this work. An experimental analysis is conducted between project management practices and sustainability outcomes. It

also looks at how project management organizations could be able to improve sustainability with the use of digital technologies. The study of project management aims to achieve both. Through the provision of theoretical and practical insights, this study seeks to advance research on sustainability and project management. This will be accomplished by integrating the two objectives within the investigation. This study offers useful guidance to businesses wishing to integrate sustainability into project management. These suggestions will be based on IT, sustainability science, and project management.

#### 2. Literature Review

In academic study, sustainability and organizational practices are hot topics. Experts are researching how firms negotiate these challenging areas because environmental preservation, social justice, and ethical governance are receiving more attention on a worldwide scale (Ng et al., 2021). The significance of these requirements is growing. Sustainability is becoming a fundamental component of contemporary corporate strategy, operations, and culture, rather than just an afterthought (Abdallah & Sicotte, 2018; Isaksson & Kiessling, 2021). Businesses across all sectors and sizes are finding it difficult to incorporate sustainability into their daily operations. The public understands that social injustice and environmental degradation cannot lead to economic development (Vianelli, 2021). Local and international organizations are having difficulty filling this requirement. Project management research on the connection between organizational practices and sustainability is expanding. Projects change organizations, no matter how big or little (Ionescu, 2021). These initiatives promote development, change, and inventiveness. There are still many questions concerning how project management might support sustainability. This is a result of organizations carrying out socially and environmentally responsible projects (Virginia, 2021). Scholars and practitioners are investigating sustainable project management as a means of resolving the problems associated with integrating environmental stewardship, social responsibility, and moral governance into project decision-making (Virginia, 2021). This new study demonstrates how contemporary company structures are impacted by sustainability. It might highlight strong, and environmentally responsible organizational practices (Darroll, 2022).

To test the premise that project budget allocation affects ESG performance, identify the key elements. Project budget allocation techniques disperse funding throughout an organization's portfolio (Larsen &

governance performance depends on how it impacts society, the environment, and government. These aims are measured by carbon emissions, community involvement, diversity and inclusion, and governance ethics (Risso, 2022; Ur Rehman et al., 2024). Many empirical research have examined social, governance, environmental, and project budget allocation. Numerous studies have examined corporation social responsibility. sustainability, and cash allocation. suggest open and equal budget distribution may encourage company social and environmental responsibility (Wang & Hu, 2022). Strategic resource allocation correlated positively with governance strategies, according to. Funding may affect an organization's governance and ethics. According to theory and research, project budget allocation practices may affect an organization's ESG performance (Kyriakogkonas et al., 2022). ESG performance improves with transparent and sustainable budget allocation. This theoretical framework states that sponsoring ESG and environmental activities benefits society, the environment, and governments. So investing in ESG efforts and sustainable projects can help organizations with social responsibility, ethical governance, and environmental stewardship. because these actions are considered greener (Barykin et al., 2023; Briard et al., 2020). Empirical study is needed to understand how project budget distribution systems affect governance, social, and environmental consequences (Zhong et al., 2023). Open and equitable budget allocation strategies are compared to centralized or opaque systems for their effects on ESG performance (Rastelli, 2023). Scholars can support sustainable project management and corporate social responsibility by empirically testing budget allocation models' financial, environmental, and social impacts (Yin, 2023). This research can also help firms improve their ESG performance by using greener budget allocation strategies.

Strifeldt, 2022). A business's environmental, social, and

H1: Project budget allocation strategies significantly influence the ESG performance outcomes of an organization.

Empirical study shows that industry sectors strongly influence project budget allocation methodologies and ESG performance (Zhao et al., 2023). Industry characteristics affect environmental sustainability and corporate social responsibility, according to significant study (Zhu et al., 2024). Liu et al. (2024), found that project budget allocation affected environmental performance differently across organizational sectors. Chen and Zhang (2024), research showed that energy

and manufacturing had more influence, also noted sectorspecific ESG adoption opportunities and challenges and the need to tailor policy to business realities. Pesqueira and Sousa (2024), findings show that sector-specific project budget distribution affects government, the environment, and society. Eco-friendly organizations handle project budget allocation methodologies and ESG performance outcomes differently by industry, according to Mangi et al. (2023) research. Companies with high environmental awareness and regulatory compliance have a stronger association between budget allocation and ESG performance, according to Wang et al. (2024). ESG objectives may not correspond with budget allocation methods in sectors with low environmental consciousness, resulting in poor results (Kandpal et al., 2024b). This theoretical framework states that industrial dynamics affect a company's sustainability opportunities, limits, and priorities. This includes regulatory frameworks, market factors, and stakeholder sustainability expectations (Dathe et al., 2024; Zhang, Phanniphong, & Li, 2023). The empirical research shows that industry sectors affect the association between project budget allocation methodologies and ESG performance results (Kandpal et al., 2024a). This theory has to be tested across many economic sectors to understand sector-specific consequences. Empirical research on how industrial contexts affect budget allocation techniques and ESG performance can help explain how organizational practices, industry dynamics, and sustainability results interact (Ray et al., 2024). These studies can help organizations tailor their sustainability plans to industry needs through better strategic decision-making.

H2: Environmentally conscious of sectors significantly moderates the relationship of project budget allocation strategies ESG performance outcomes.

Many in-depth empirical research have examined organizational and ESG performance. These papers examine sustainable management. Strong environmental, social, and governance (ESG) performance improves company effectiveness and sustainability, according to extensive research (Patil et al., 2021). A detailed meta-analysis by found a strong link between ESG success and financial performance. Gitau and Sang (2022), research shows that ESG-rated organizations generate more long-term earnings and value. This highlights the strategic importance of ESG factors in organizational policies. examined how ESG performance affects employee engagement and retention (Arvidsson & Dumay, 2022). Environmental,

social, and governance (ESG) performance criteria boost employee engagement and lifetime. Their empirical research yielded this. Becchetti et al. (2022), findings show that socially and environmentally responsible organizations attract and retain top talent, helping them maintain their labour market leadership. These studies show ESG performance's many benefits and impact on organizational sustainability (Risso, 2022). This research believe ESG performance significantly impacts digital transformation project sustainable management. The empirical link between ESG and organizational performance is supported. According to Vandevenne, Van Riel and Poels (2023), organizations with higher ESG ratings are more likely to use successful digital transformation management techniques. All organizations, especially those facing digital revolutions, must follow ESG principles of social responsibility, environmental stewardship, and ethical governance (Paro, 2023). Thus, adding sustainability into digital transformation projects may increase long-term value, stakeholder engagement, and cost-effectiveness (Rastelli, 2023). Current empirical evidence supports the relationship between ESG performance and sustainable digital transformation management practices, but further study is needed to rigorously validate this notion (Jones et al., 2023; Wu, Yatim, & Ngan, 2023). Empirical research on how environmental, social, and governance (ESG) performance affects digital transformation project management will help us understand how sustainability affects digital organizational practices (Kwilinski et al., 2023). This information helps firms make strategic decisions and create longer-term, more comprehensive digital transformation plans (see Figure 1).

H3: ESG performance outcomes significantly influence the digital transformation projects sustainable management performance.

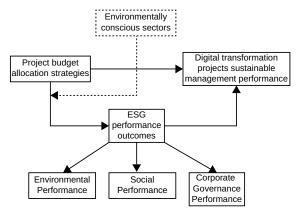


Figure 1: Conceptual Framework.

### 3. Methodology

The research conducted in China focused specifically on managers employed in the electronics industry. For statistical power and sample representation, 329 volunteers were recruited. Data was collected using standardized questionnaires (see table 1). They were also tasked with sharing their perspectives and experiences on project budgeting, ESG performance, environmental sectors, and sustainable management in digital transformation initiatives. Table 1 delineates the demographics of 329 respondents, encompassing their gender, age, educational attainment, employment status, tenure in the electronics sector, and mean experience.

The table indicates that the predominant demographic of respondents is male (74.5%), aged 30-40 years (35.9%), possessing an associate degree (55.3%), and employed by a private enterprise (36.2%). 25.5% of respondents possess 3-5 years of experience in the electronics industry. The study used questionnaire scales from earlier studies. The concepts under consideration were consistently and accurately assessed using this method. Table 2 shows the amended project management, sustainability management, and organizational behaviour scales from prior studies. These scales have been tailored to electronics sector digital transformation programs. Stata was used to analyse the data after collection.

Table 1: Demographics of Respondents.

Variable's Name	Туре	Frequency	Relative Frequency (%)
Gender	Male	245	74.5
Gender	Female	84	25.5
	≤30	143	43.5
	31-40	118	35.9
Age	41-50	33	10.0
	51-60	22	6.7
	≥ 61	13	3.95
	High school and below	19	5.8
	Associate degree	182	55.3
Education level	Undergraduate	77	23.4
	Postgraduate	49	14.9
	PHD	2	4
	Student	93	28.2
	Government employee	48	14.5
Employment	Private company employee	119	36.1
	Self-employee	38	11.5
	Retired	31	9.42
	≤1 year	52	15.8
	1-3 years	66	20.0
Experience	3-5 years	84	25.5
	5-10 years	98	29.7
	≥10 years	29	8.81

Researchers used Structural Equation Modelling to examine factor relationships. Structural equation modelling (SEM) allowed simultaneous analysis of many relationships between visible and latent components, improving organization performance understanding. The study included data screening, model definition, parameter estimation, model appropriateness testing, and hypothesis testing. The study was preceded by

comprehensive data screening to assure data integrity, coherence, and inclusion. After that, a measurement model was created using earlier research and theoretical frameworks to specify the interactions between observable and latent variables during evaluation. The parameters were estimated using the most probable estimation technique, and the strength and statistical significance of the variable connection were determined.

Table 2: Scales Information.

Variable	Items	Reference
Project Budget Allocation Strategies	Five Items	(Fortuna, 2021)
ESG Performance Outcomes	Fourteen Items	(Zhou et al., 2023)
Environmentally Conscious Sectors	Nine Items	(Thormann, Wicker, & Braksiek, 2022)
Digital Transformation Projects Sustainable Management Performance	Eight Items	(Liang, Lee, & Jung, 2022)

#### 4. Results

Table 3 presents data on the reliability of project budget allocation strategy, ESG performance outcomes, environmentally conscious sectors, and sustainable management performance of digital transformation projects. The reliability of all variables is assessed using Cronbach's alpha, composite reliability, and

average variance extracted (AVE). Project budget allocation procedures are internally consistent with 0.757 Cronbach's alpha. The composite reliability coefficient is 0.829, over 0.70, indicating strong dependability. The average variance extracted (AVE) for project budget allocation strategies is 0.509, above 0.50, indicating convergence.

Table 3: Reliability Statistics.

<del>-</del>			
Variable	Cronbach's Alpha	<b>Composite Reliability</b>	Average Variance Extracted (AVE
Project Budget Allocation Strategies	0.757	0.829	0.509
ESG Performance Outcomes	0.804	0.766	0.527
Environmentally Conscious Sectors	0.740	0.793	0.587
Digital Transformation Projects Sustainable Management Performance	0.710	0.821	0.514

ESG performance outcome dependability data show good internal consistency with a Cronbach's alpha of 0.804. Composite reliability of 0.766 and AVE of 0.527 suggest high reliability and convergent validity. Cronbach's alpha is 0.740 in environmental sectors, indicating internal consistency. Composite reliability of 0.793 and AVE of 0.587 indicate high reliability and convergent validity.

Finally, Cronbach's alpha of 0.710 indicates good internal consistency for digital transformation project sustainable management performance. The composite reliability score is 0.821 and the AVE is 0.514, indicating high convergent validity. Research findings are supported by reliability statistics that demonstrate the study's measuring model's robustness and consistency.

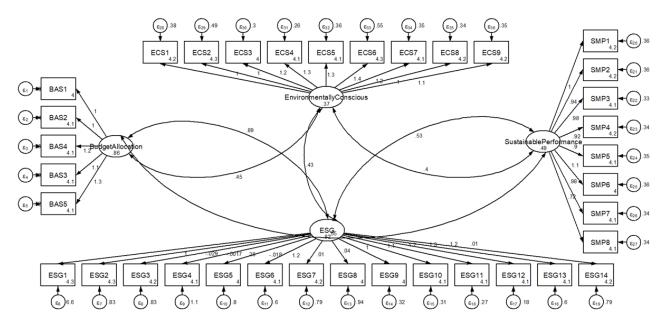


Figure 2: Estimated Model.

The measurement model's fit to the data and correlations between observable variables and their constructs are assessed by Confirmatory Factor Analysis (CFA) in Table 4. Standardized coefficients (OIM Coef.) show variable-construct correlation intensity and direction. All standardized coefficients for project budget allocation strategies (BAS) are statistically significant, ranging from

0.609 to 0.688, indicating a strong positive relationship between observed variables and latent construct. From 0.320 to 0.894, all ESG performance outcomes (ESG) standardized coefficients are statistically significant, demonstrating a strong relationship between the observable variables and the concept. These findings confirm the measurement model's convergent and

discriminant validity by showing that observed variables measure constructs. All standardized coefficients for environmentally conscious sectors (ECS) are statistically significant, ranging from 0.678 to 0.857, indicating a strong positive relationship between observed variables and latent construct. SMP6, with a large standard error of 0.810, is the only digital transformation project

sustainable management performance (SMP) coefficient that is not statistically significant. The variables and sustainable management performance are strongly correlated, except for SMP6, which may need further study. CFA shows measurement model validity and reliability, supporting structural equation modelling to test research hypotheses.

Table 4: Confirmatory Factor Analysis.

Measurement	OIM Coef.	Std. Err.	Z	P> z	[95% Con	f. Interval]
BAS1	1	(Const	rained)			
BAS2	0.688	0.050	2.186	0.000	0.590	0.635
BAS3	0.659	0.052	1.734	0.000	0.557	0.610
BAS4	0.671	0.061	4.154	0.000	0.551	0.641
BAS5	0.609	0.063	8.983	0.000	0.485	0.733
ESG1	1	(const	rained)			
ESG2	0.320	0.064	4.928	0.000	0.195	0.445
ESG3	0.601	0.070	10.013	0.005	0.501	0.825
ESG4	0.536	0.057	11.838	0.000	0.492	0.790
ESG5	0.851	0.080	12.015	0.002	0.701	0.864
ESG6	0.688	0.069	9.757	0.000	0.552	0.823
ESG7	0.792	0.064	12.104	0.000	0.666	0.918
ESG8	0.894	0.070	12.545	0.000	0.757	0.835
ESG9	0.877	0.057	15.078	0.000	0.765	0.792
ESG10	0.816	0.067	12.030	0.000	0.613	0.828
ESG11	0.810	0.064	11.993	0.000	0.685	0.934
ESG12	0.759	0.062	11.607	0.000	0.639	0.880
ESG13	0.832	0.059	13.339	0.000	0.717	0.759
ESG14	0.641	0.067	9.443	0.000	0.510	0.771
ECS1	1	(Const	rained)			
ECS2	0.781	0.064	11.456	0.000	0.655	0.906
ECS3	0.757	0.065	11.004	0.000	0.630	0.884
ECS4	0.857	0.067	12.030	0.000	0.726	0.801
ECS5	0.736	0.070	13.838	0.000	0.692	0.890
ECS6	0.719	0.065	10.355	0.000	0.591	0.848
ECS7	0.790	0.065	11.418	0.000	0.662	0.917
ECS8	0.826	0.063	12.232	0.000	0.702	0.763
ECS9	0.678	0.058	10.925	0.000	0.565	0.792
SMP1	1	(Const	rained)			
SMP2	0.866	0.064	12.709	0.000	0.741	0.804
SMP3	0.692	0.059	10.860	0.000	0.575	0.809
SMP4	0.305	0.061	4.688	0.000	0.186	0.424
SMP5	0.748	0.061	2.349	0.000	0.628	0.867
SMP6	0.810	0.451	1.628	0.000	0.620	0.784
SMP7	0.191	0.092	1.882	0.014	0.372	0.286
SMP8	0.541	0.062	9.443	0.000	0.692	0.890

Project budget allocation methodologies, ESG performance outcomes, environmentally conscious sectors, and digital transformation projects' sustainable management performance are factor loaded in Table 5. Factor loadings show the measurement model's

observed variables' intensity and direction of construct relationship. All project budget allocation scheme indicator variables measure the latent construct with factor loadings from 0.629 to 0.731. Except for ESG6 and ESG14, most indicator variables for

ESG performance outcomes have factor loadings between 0.516 and 0.829. The observed variables appear to capture the complexity of ESG performance outcomes, encompassing environmental, social, and governance components. All indicator variables for environmentally concerned sectors had significant factor loadings from 0.569 to 0.775, indicating a strong relationship between observed variables and the latent construct. All digital transformation project sustainable management performance indicator variables exhibit significant factor loadings from 0.698 to 0.777, indicating a strong link between the observed variables and the construct. Table 4's factor loadings demonstrate that the measurement model is valid and reliable and that observed variables appropriately measure constructs. Use this data to test research hypotheses.

Table 5: Factor Loadings.

Variable	Indicator	Original Sample
	BAS1	0.714
Project Budget	BAS2	0.706
Allocation	BAS3	0.629
Strategies	BAS4	0.679
	BAS5	0.731
	ESG1	0.753
	ESG2	0.775
	ESG3	0.698
	ESG4	0.829
	ESG5	0.767
500	ESG6	0.516
ESG Performance	ESG7	0.629
Outcomes	ESG8	0.812
Outcomes	ESG9	0.764
	ESG10	0.794
	ESG11	0.751
	ESG12	0.722
	ESG13	0.596
	ESG14	0.544
	ECS1	0.648
	ECS2	0.686
	ECS3	0.680
Environmentally	ECS4	0.708
Conscious	ECS5	0.724
Sectors	ECS6	0.589
	ECS7	0.569
	ECS8	0.753
	ECS9	0.775
	SMP1	0.698
Digital	SMP2	0.777
Transformation	SMP3	0.723
Projects Sustainable	SMP4	0.737
	SMP5	0.730
Management	SMP6	0.722
Performance	SMP7	0.728
	SMP8	0.746

Table 6 compares saturated and estimated model fitness statistics. The saturated model has an SRMR

of 0.051, whereas the estimated model has 0.073. The likelihood ratio of the calculated model to the saturated model is substantial (p < 0.0001), showing that it better fits the data than a model without constraints. A significant chi-squared test value (p < 0.0001) indicates that the estimated model better fits the data compared to the saturated model. Despite both models fitting the data well, the estimated model outperforms the baseline model in the baseline chi-squared test statistic (p < 0.0001). These statistics indicate that the estimated model fits the data, although it could be improved by modification or adding variables.

Table 6: Model Fitness.

	Saturated Model	Estimated Model	Statistic		Description	
	0.051	0.073	Likelihood Ratio	13791.839	Model vs. Saturated	
SR			p > chi2	0.000		
SRMR			chi2_ bs(2356)	11003.552	Baseline vs.	
			p > chi2	0.000	Saturated	

Table 7 shows the R-Square values for each structural equation model variable. Each endogenous variable's R-Square value shows how much variance the model's exogenous variables explain. Project budget allocation strategies have an R-Square score of 0.328, indicating that the independent variables in the model explain 32.8% of the variation. ESG (Environmental, Social, and Governance) performance outcomes have an R-Square value of 0.210, indicating that the model's predictors account for 21.0% of the variance. For environmentally concerned industries, the R-Square score is higher at 0.430, indicating that the model's independent variables explain 43.0% of the variation. These R-Square values show how much the exogenous factors explain the variability in the endogenous variables, emphasizing the importance of the included predictors in understanding and forecasting the outcomes of interest.

Table 7: R-Square.

Variable	R Square
Project Budget Allocation Strategies	0.328
ESG Performance Outcomes	0.210
Environmentally Conscious Sectors	0.430

Path analysis results in Table 8 show the relationships between project budget allocation strategies, ESG performance outcomes, environmentally conscious sectors, and digital transformation projects' sustainable management performance. A substantial positive correlation exists between project budget allocation

strategies and ESG performance results (p < 0.001), with a path coefficient of 0.766. This shows that proactive budget allocation tactics that prioritize ESG factors are more likely to improve ESG performance

than typical budgeting approaches. This supports past studies on integrating ESG criteria into budget allocation decisions to drive sustainability in digital transformation projects.

Table 7: Path Analysis.

	OIM Coef.	Std. Err.	Z	P> z	[95% Conf	. Interval]
Project budget allocation strategies significantly influence the ESG performance outcomes of an organization.	0.766	0.056	2.434	0.000	0.657	0.708
Environmentally conscious of sectors significantly moderates the relationship of project budget allocation strategies ESG performance outcomes.	0.734	0.058	1.931	0.000	0.621	0.679
ESG performance outcomes significantly influence the digital transformation projects sustainable management performance.	0.747	0.068	4.626	0.000	0.613	0.714

Second, the path coefficient (0.734) suggests that environmentally conscious sectors mitigate the link between project budget allocation strategies and ESG performance (p < 0.001). This shows that industry sector environmental consciousness greatly impacts project budget allocation and ESG performance. Environmentally sensitive organizations may benefit more from ESG budget allocation decisions than less sensitive ones. Digital transformation sustainability projects highlight sector- and industry-specific constraints and opportunities. ESG performance outcomes significantly impact digital transformation project sustainability, as shown by a path coefficient

of 0.747 (p < 0.001). ESG-performing companies employ sustainable management concepts more in digital transformation. Digital transformation projects that prioritize environmental, social, and governance (ESG) factors can have better results and more sustainable management systems. The path analysis shows the complex relationship between project budget allocation techniques, ESG performance results, and sustainable management performance in digital transformation projects, emphasizing the need to integrate sustainability into organizational strategy and decision-making (see Figure 3).

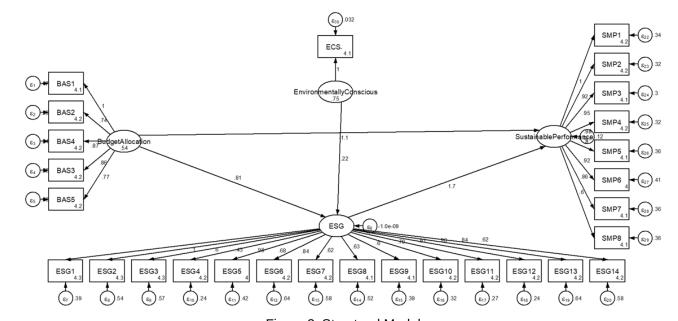


Figure 3: Structural Model.

### 5. Discussion

This study examines the complicated relationships between digital transformation project management,

ESG performance, sector consciousness of environmental issues, and project budget allocation. This research examines how financial resource

distribution affects organizational sustainability. The research investigation examines how sector-specific consciousness of the environment affects ESG performance and budgeting. This research study shows that ESG performance outcomes significantly affect digital transformation project sustainability. Study examines how organizations handle digital transition and sustainability. The variables relationships highlight the importance of strategic issues in balancing financial, governance, social, and environmental desired outcomes. Financial resource allocation, sector dynamics, and sustainability outcomes are complex, but results assist scholars and practitioners understand them. The premise is that open, egalitarian, and ecofriendly budget distribution improves sustainability. Businesses must consider sector-specific environmental consciousness while creating sustainability plans for their sectors. Environmental concerns may moderate the sector. Since ESG performance outcomes strongly impact digital transformation project management, organizations must consider sustainability while making strategic decisions. The complex relationship between organizational efficiency, sustainability, and financial management is explained by this research. It provides real solutions for digitally sustainable enterprises.

The first hypothesis suggests that project budget allocation greatly impacts ESG performance. According to research, financial resource allocation impacts ESG performance. Sustainable organizations that prioritize environmental safety, social responsibility, and ethical governance benefit from transparent and equitable budget distribution. Sustainable and effective budget allocation improves ESG performance more than opaque or inefficient ones. Allocating money to environmental, social, and governance (ESG) issues helps organizations solve environmental issues, involve stakeholders, and respect governance standards. This hypothesis explains how financial management affects sustainability outcomes, emphasizing the need to incorporate sustainability into business decisions. The second hypothesis explains how project budget allocation and sector dynamics affect ESG performance. In environmentally conscious and regulated businesses, budget allocation strategies are more tied to ESG performance. Past studies (Becchetti et al., 2022; Darroll, 2022) reveal that environmentally conscious companies budget for sustainability, increasing governance, social, and environmental outcomes. Budget allocation may not effect ESG performance in non-green enterprises. Ecologically uninformed organizations would struggle

to balance ESG goals and budgets. Alignment may undermine sustainability. This theory implies that sector-specific dynamics should be considered when assessing budget allocation and ESG performance. Sector-specific sustainability management solutions are essential.

ESG factors affect sustainable management performance in digital transformation projects, according to the third hypothesis. ESG impacts project sustainability and performance. Using the approach, ESG-focused companies would integrate sustainable management into their digital transformation. Jones et al. (2023) found that integrating sustainability concepts into managerial practices may boost an organization's competitiveness and adaptability. According to the findings, organizations can mitigate environmental and social risks by prioritizing ESG problems in their digital transformation plan. For value creation, these businesses may benefit from fresh techniques and opportunities. According to the survey, businesses can do both. Companies undertaking digital transformation must implement a sustainability management strategy. The methodology should consider social dynamics, government, and the environment. Dathe et al. (2024), paper recommends judging digital operations by project performance and sustainability. Empirical data supports firms going over this barrier. The theory emphasizes stakeholder participation and openness in digital transformation sustainable governance. Environmental, social, and governance (ESG) performance measurements and stakeholder involvement in decision-making processes increase investor and customer trust and dependability, according to Jones et al. (2023). The final hypothesis is confirmed, showing that ESG performance affects digital transformation project sustainable management methods. The company must include sustainability into its business strategy and decision-making to increase value and stakeholder trust.

These three hypotheses show that sectoral context, performance outcomes, and strategic decision-making affect digital transformation sustainability. Some of the complex dynamics being discussed include how budget allocation strategies affect environmental, social, and governance (ESG) performance outcomes, how environmentally conscious sectors moderate them, and how ESG performance outcomes and sustainable management practices are linked. This essay provides critical analysis and practical advice for using digital transformation to make positive improvements. This presents a big opportunity for organizations struggling

with digital innovation and sustainability. If they integrate sustainability into all aspects of their digital operations, they may impact society and the environment more. Through integration, a multi-national society may acquire resilience and values.

#### 6. Conclusion

This study illuminated the complicated linkages between sustainable management, environmentally conscious organizations, ESG performance results, and digital transformation project budget allocation strategies. Considering everything, this inquiry clarified relationships. This research shows how digital initiatives can boost organizational resilience, sustainability, and long-term value. This understanding came from practical and theoretical research. The three accepted assumptions explain how sector environment, strategic decision-making, and performance outcomes affect digital transformation sustainability. Each hypothesis illuminates complex dynamics like the relationship between environmental, social, and governance (ESG) performance outcomes and sustainable management practices, the moderating role of environmentally conscious sectors, and the effects of budget allocation strategies. The report also offers sustainable digital transformation methods for firms. These tips will help these organizations succeed in the modern business world and create a more sustainable and inclusive future. This study can help us comprehend digital transformation and sustainability by acknowledging its limitations and suggesting future research. This will inspire moral corporate behaviour, creativity, and adaptability in a changing world.

### 6.1. Theoretical and Practical Implications

This research affects organizational theory and strategic management beyond digital transformation and sustainable management. This study illuminates how companies navigate the current business climate by examining the complex relationships between project budget allocation methods, ESG performance outcomes, environmentally conscious industries, and sustainable management practices. This study underlines the relevance of sustainability in strategic decision-making since financial resource allocation, environmental stewardship, social responsibility, and governance efficacy are strongly linked. Conventional wisdom holds that digital transformation programs can boost technological innovation, operational efficiency, organizational resilience, and sustainability. This study strengthens stakeholder theory by showing that stakeholders other than shareholders affect

organizational behaviour and performance, emphasizing the need for a holistic value creation strategy. The strategic importance of intangible assets like environmental consciousness and social capital to organizational performance and competitive advantage supports the resource-based perspective premise in the study report. This study illuminates the complex interplay between technology, sustainability, and organizational dynamics in modern corporations.

This study has several implications for digital transformation and sustainability. The findings underscore the importance of sustainability in strategic decision-making, particularly project budget allocation. If corporations connect their financial resources with environmental, social, and governance (ESG) concerns, this knowledge could help promote such programs. Sustainability-focused budgets decrease environmental and social risks and boost innovation and competitiveness. Research shows that sectoral context is key to digital transformation sustainability. Environmentally responsible companies can use their industry and regulatory expertise to influence change and grow sustainably. The study found that sustainable digital transformation project management requires stakeholder engagement and openness. Organisations that involve stakeholders and are transparent Customers, investors, and other stakeholders trust ESG performance measures. This study shows how organizations may integrate sustainability into their digital transformation activities to increase profitability, decrease risks, and strengthen their future.

## 6.2. Limitations and Recommendations

This research helps us understand how project budget allocation tactics, ESG performance results, environmentally concerned industries, and sustainable management practices affect digital transformation projects, but it has some drawbacks. First, the study's cross-sectional data makes causal connection problematic. Structural equation modelling was used to examine anticipated correlations, but longitudinal or experimental methods could reveal temporal dynamics and causative mechanisms. Common method bias and social desirability biases may increase variable linkages in self-reported data. Objective performance measures and qualitative interviews could improve study validity and reliability. Limitations of the study include its concentration on large firms in certain industries. Future research could adapt the paradigm to varied organizational sizes, industries, and nations to better understand digital transformation, sustainability, and

organizational success. These restrictions imply several study possibilities to understand the complex interaction between digital development and sustainability. First, longitudinal studies could discover causal relationships and assess dynamic changes in project budget allocation methodologies' effects on ESG performance and sustainable management. Second, study may examine how AI, block chain, and IoT might aid digital transformation sustainability. These technologies can improve organizational processes, transparency, and cooperation, enabling new sustainability alternatives. Future research should analyse how regulatory frameworks and policy interventions affect digital transformation project organizational sustainability practices, showing the socio-political context that shapes sustainability initiatives. Finally, research may evaluate how organisational culture, leadership styles, and stakeholder engagement tactics affect digital transformation project sustainability outcomes, giving leaders practical guidance for promoting sustainability and innovation. Researchers may improve digital transformation, sustainability management, and strategic decision-making theory and practice for a sustainable and inclusive future.

## 6.3. Project Name

Research on Sustainable development path of mining enterprises in Liaoning Province under the background of carbon neutrality

### 6.4. Project Number

L21CGL017

## 6.5. Project source

Social Science Planning Fund of Liaoning Province in 2021

#### References

Abdallah, S. B., & Sicotte, H. (2018). A real options analysis of project portfolios: Practitioners' assessment. *The Journal of Modern Project Management, 6*(2), 32-53. <a href="https://doi.org/10.19255/JMPM01703">https://doi.org/10.19255/JMPM01703</a>

Arvidsson, S., & Dumay, J. (2022). Corporate ESG reporting quantity, quality and performance: Where to now for environmental policy and practice? *Business strategy and the environment*, 31(3), 1091-1110. <a href="https://doi.org/10.1002/bse.2937">https://doi.org/10.1002/bse.2937</a>

Barykin, S. E., Strimovskaya, A. V., Sergeev, S. M., Borisoglebskaya, L. N., Dedyukhina, N., Sklyarov, I., et al. (2023). Smart City logistics on the basis of digital tools for ESG goals achievement. *Sustainability*, *15*(6), 5507. https://doi.org/10.3390/su15065507

Becchetti, L., Cordella, M., & Morone, P. (2022). Measuring investments progress in ecological transition: The Green Investment Financial Tool (GIFT) approach. *Journal of Cleaner Production, 357,* 131915. <a href="https://doi.org/10.1016/j.jclepro.2022.131915">https://doi.org/10.1016/j.jclepro.2022.131915</a> Božić, V. (2023). The relationship between ESG and ICT. Briard, R., Bhuiyan, N., Sicotte, H., & Keshani, P. (2020). Critical Success Factors in New Product Development Projects in a Weak Matrix Structure: An Aerospace Case Study. *The Journal of Modern Project Management, 8*(2), 38-57. <a href="https://doi.org/10.19255/JMPM02403">https://doi.org/10.19255/JMPM02403</a>

Chen, R., & Zhang, T. (2024). Artificial intelligence applications implication for ESG performance: can digital transformation of enterprises promote sustainable development? *Chinese Management Studies*. https://doi.org/10.1108/CMS-11-2023-0653
Darroll, V. (2022). *A sustainability strategy implementation for a software development company: A comprehensive framework* Otago Polytechnic, Dunedin, New Zealand]. https://doi.org/10.34074/thes.5827
Dathe, T., Helmold, M., Dathe, R., & Dathe, I. (2024). *Implementing Environmental, Social and Governance (ESG) Principles for Sustainable Businesses: A Practical Guide in Sustainability Management*. Springer Nature. https://doi.org/10.1007/978-3-031-52734-0

Fortuna, C. P. A. (2021). Budgeting practices: its impact on the profitability of small and medium enterprises in Isabela. *Universal Journal of Accounting and Finance*, 9(3), 336-346. <a href="https://doi.org/10.13189/ujaf.2021.090307">https://doi.org/10.13189/ujaf.2021.090307</a>

Gitau, O., & Sang, P. (2022). Impact assessment for sustainable project management and pension funds projects performance in Kenya. *International Journal of Scientific Research and Management, 10*(01), 2852-2863. <a href="https://doi.org/10.18535/ijsrm/v10i1.em3">https://doi.org/10.18535/ijsrm/v10i1.em3</a>
Hu, Y., Hassan, A., & Atif, S. (2024). Examining the Interplay between CEPSA's ESG Performance and Financial Performance: An Overview of the Energy Sector Transformation. *Sustainability, 16*(7), 2772. <a href="https://doi.org/10.3390/su16072772">https://doi.org/10.3390/su16072772</a>

lonescu, L. (2021). Corporate environmental performance, climate change mitigation, and green innovation behavior in sustainable finance. *Economics, Management, and Financial Markets, 16*(3), 94-106. <a href="https://www.ceeol.com/search/article-detail?id=983519">https://www.ceeol.com/search/article-detail?id=983519</a> Isaksson, L., & Kiessling, T. (2021). Corporate social responsibility (CSR) and engineering management: Performance implications. *IEEE Transactions on Engineering Management, 70*(11), 4021-4031. <a href="https://doi.org/10.1109/TEM.2021.3091702">https://doi.org/10.1109/TEM.2021.3091702</a>

Jones, B., Rasha, A., Dyczkowska, J., & Dyczkowski, T. (2023). Sustainable performance management in the EU SME sector. A review and analysis of concepts and methods of strategic management accounting. *The Theoretical Journal of Accounting,* 47(4), 191-215. <a href="https://www.ceeol.com/search/article-detail?id=1204859">https://www.ceeol.com/search/article-detail?id=1204859</a>

Kandpal, V., Jaswal, A., Gonzalez, E. D. S., & Agarwal, N. (2024a). *Sustainable Energy Transition*. Springer. https://doi.org/10.1007/978-3-031-52943-6

Kwilinski, A., Lyulyov, O., & Pimonenko, T. (2023). Unlocking sustainable value through digital transformation: An examination of ESG performance. *Information*, *14*(8), 444. https://doi.org/10.3390/info14080444

Kyriakogkonas, P., Garefalakis, A., Pappa, E., & Kagias, P. (2022). Sustainable Project management under the light of ESG criteria: A theoretical approach. *Theoretical Economics Letters*, *12*(6), 1517-1538. <a href="https://doi.org/10.4236/tel.2022.126083">https://doi.org/10.4236/tel.2022.126083</a>

Larsen, T. T., & Strifeldt, H. E. (2022). *Implementing ESG: The Role of Management Control Systems* University of Agder]. <a href="https://hdl.handle.net/11250/3010440">https://hdl.handle.net/11250/3010440</a>

Liang, Y., Lee, M. J., & Jung, J. S. (2022). Dynamic capabilities and an ESG strategy for sustainable management performance. *Frontiers in Psychology,* 13, 887776. <a href="https://doi.org/10.3389/fpsyg.2022.887776">https://doi.org/10.3389/fpsyg.2022.887776</a>
Liu, B., Qiu, Z., Hu, L., Hu, D., & Nai, Y. (2024). How digital transformation facilitate synergy for pollution and carbon reduction: Evidence from China. *Environmental Research, 251,* 118639. <a href="https://doi.org/10.1016/j.envres.2024.118639">https://doi.org/10.1016/j.envres.2024.118639</a>

Mangi, M., Anwar, R. S., Khan, S., Rehman, M. Z., Bhatti, M. I., & Alonazi, W. B. (2023). Enhancing sustainability in the agricultural sector amid COVID-19: An implication of the transactional theory. *Sustainability,* 15(13), 9960. https://doi.org/10.3390/su15139960

Ng, A. W., Nathwani, J., Fu, J., & Zhou, H. (2021). Green financing for global energy sustainability: prospecting transformational adaptation beyond Industry 4.0. *Sustainability: Science, Practice and Policy, 17*(1), 377-390. <a href="https://doi.org/10.1080/15487733.2021.1999079">https://doi.org/10.1080/15487733.2021.1999079</a> Paro, P. E. P. (2023). *Towards a Conscious Business future: proposal and application of a multidimensional framework and its effects on stakeholders\'engagement, financial performance and ESG metrics* Universidade de São Paulo].

Patil, R. A., Ghisellini, P., & Ramakrishna, S. (2021). Towards sustainable business strategies for a circular economy: environmental, social and governance (ESG) performance and evaluation. *An introduction to circular economy*, 527-554. <a href="https://doi.org/10.1007/978-981-15-8510-4">https://doi.org/10.1007/978-981-15-8510-4</a> 26

Pesqueira, A., & Sousa, M. J. (2024). Exploring the role of big data analytics and dynamic capabilities in ESG programs within pharmaceuticals. *Software Quality Journal*, 1-34. https://doi.org/10.1007/s11219-024-09666-4

Rastelli, C. (2023). Design and development of a Corporate Performance Management tool in support of ESG planning activities Politecnico di Torino]. <a href="http://webthesis.biblio.polito.it/id/eprint/26325">http://webthesis.biblio.polito.it/id/eprint/26325</a>

Ray, S., Kumar, D., Roy, S., & Verma, A. (2024). ESG and Firm Value Linkage: A Case Study in the Automotive Industry. *Indatu Journal of Management and Accounting,* 2(1), 19-28. https://doi.org/10.60084/ijma.v2i1.154

Risso, D. (2022). Integrating sustainability into an organization: A project, program, and portfolio management approach Politecnico di Torino]. <a href="http://webthesis.biblio.polito.it/id/eprint/25631">http://webthesis.biblio.polito.it/id/eprint/25631</a>

Shehab, A. R. (2021). Environmental, social and governance (ESG) considerations in real estate investments. Impact of environmental performance disclosure, activities and score on financial performance of SIIQ.

Szóka, K. (2022). The importance of green controlling—the connection of the sustainability balanced scorecard and the ESG. 38th Ebes Conference-Warsaw: Proceedings,

Thormann, T. F., Wicker, P., & Braksiek, M. (2022). Stadium travel and subjective well-being of football spectators. *Sustainability, 14*(12), 7278. <a href="https://doi.org/10.3390/su14127278">https://doi.org/10.3390/su14127278</a>

Ur Rehman, K., Anwar, R. S., Antohi, V. M., Ali, U., Fortea, C., & Laura Zlati, M. (2024). Driving frugal innovation in SMEs: how sustainable leadership, knowledge sources and information credibility make a difference. *Frontiers in Sociology*, 9, 1344704. <a href="https://doi.org/10.3389/fsoc.2024.1344704">https://doi.org/10.3389/fsoc.2024.1344704</a>

Vandevenne, N., Van Riel, J., & Poels, G. (2023). Green Enterprise Architecture (GREAN)—Leveraging EA for Environmentally Sustainable Digital Transformation. Sustainability, 15(19), 14342. https://doi.org/10.3390/su151914342

Vianelli, E. (2021). Sustainable Finance and Sustainable Development: The SDGs and ESG Indicators in Sustainable Investment Evaluation in Italy Ca' Foscari University of Venice]. <a href="https://hdl.handle.net/10579/19814">https://hdl.handle.net/10579/19814</a> Virginia, A. T. (2021). Improving the sustainability strategies and performances in the private sector Radboud University]. <a href="https://theses.ubn.ru.nl/server/api/core/bitstreams/7ea39750-1a0a-4175-9f0d-691258ef40bc/content">https://theses.ubn.ru.nl/server/api/core/bitstreams/7ea39750-1a0a-4175-9f0d-691258ef40bc/content</a>

Wang, X., & Hu, S. (2022). Can performance-based budgeting reform improve corporate environment in ESG? Evidence from Chinese-listed firms. *Frontiers in Environmental Science*, *10*, 982160. <a href="https://doi.org/10.3389/fenvs.2022.982160">https://doi.org/10.3389/fenvs.2022.982160</a>

Wang, Z., Chu, E., & Hao, Y. (2024). Towards sustainable development: How does ESG performance promotes corporate green transformation. *International Review of Financial Analysis*, 91, 102982. <a href="https://doi.org/10.1016/j.irfa.2023.102982">https://doi.org/10.1016/j.irfa.2023.102982</a>

Wu, Y., Yatim, P., & Ngan, S. L. (2023). Exploring the relationship between environmental, social and governance (ESG) performance, financial constraints, and corporate value in chinese listed firms (CLFS): A comprehensive literature review. *The Journal of Modern Project Management*, 11(2), 220-237. <a href="https://doi.org/10.19255/JMPM03214">https://doi.org/10.19255/JMPM03214</a>

Yin, D. (2023). How Environmental, Social, and Governance (ESG) Impacts the Facility Managers and the Facilities Management Profession Pratt Institute]. Zahid, A. (2021). Overcoming Barriers for Sustainable Project Management NTNU]. <a href="https://hdl.handle.net/11250/2787190">https://hdl.handle.net/11250/2787190</a>

Zhang, Y., Phanniphong, K., & Li, P. (2023). Corporate greening initiatives and management governance: Analysing their impact on project performance and stakeholder engagement. *The Journal of Modern Project Management*, 11(2), 132-153. <a href="https://doi.org/10.19255/JMPM03209">https://doi.org/10.19255/JMPM03209</a>

Zhao, Q., Li, X., & Li, S. (2023). Analyzing the relationship between digital transformation strategy and ESG performance in large manufacturing enterprises: The mediating role of green innovation. *Sustainability, 15*(13), 9998. <a href="https://doi.org/10.3390/su15139998">https://doi.org/10.3390/su15139998</a>
Zhong, Y., Zhao, H., & Yin, T. (2023). Resource bundling: How does enterprise digital transformation affect enterprise ESG development? *Sustainability, 15*(2), 1319. <a href="https://doi.org/10.3390/su15021319">https://doi.org/10.3390/su15021319</a>
Zhou, S., Rashid, M. H. U., Mohd. Zobair, S. A., Sobhani, F. A., & Siddik, A. B. (2023). Does ESG impact firms' sustainability performance? The mediating effect of innovation performance. *Sustainability, 15*(6), 5586. <a href="https://doi.org/10.3390/su15065586">https://doi.org/10.3390/su15065586</a>

Zhu, F., Xu, X., & Sun, J. (2024). The short board effect of ESG rating and corporate green innovation activities. *Plos one*, *19*(3), e0299795. <a href="https://doi.org/10.1371/journal.pone.0299795">https://doi.org/10.1371/journal.pone.0299795</a>

# APPENDIX 1 Project Budget Allocation Strategies

- 1. How does your organization typically allocate budgets for digital transformation projects?
- 2. To what extent does your organization consider environmental sustainability when allocating budgets for digital transformation projects?
- 3. How are budget allocation decisions influenced by social responsibility considerations within your organization?
- 4. What factors play a significant role in determining budget allocation strategies for digital transformation projects in your organization?
- 5. How frequently does your organization reassess and adjust budget allocation strategies in response to evolving sustainability goals?

#### **ESG Performance Outcomes**

- 1. Please rate the extent to which your organization prioritizes environmental sustainability in its operations.
- 2. How effectively does your organization manage and reduce its carbon footprint?
- 3. To what degree does your organization promote diversity and inclusion within its workforce?
- 4. How transparent is your organization in disclosing information related to governance practices?
- 5. How does your organization engage with stakeholders to address social and environmental concerns?
- 6. Rate the effectiveness of your organization's waste management and recycling initiatives.
- 7. How does your organization ensure fair labour practices and employee well-being?
- 8. How does your organization contribute to the local community through social initiatives and philanthropy?
- 9. Please rate the level of employee satisfaction and engagement within your organization.
- 10. How does your organization mitigate risks related to environmental and social factors?
- 11. Rate the level of compliance with regulatory standards and industry best practices in your organization.
- 12. How does your organization monitor and report on its environmental, social, and governance performance?
- 13. Rate the effectiveness of your organization's efforts in promoting ethical business practices.
- 14. How does your organization measure and track its overall sustainability performance?

### **Environmentally Conscious Sectors**

1. How important is environmental sustainability within your industry sector?

- 2. To what extent are organizations within your sector investing in renewable energy and green technologies?
- 3. How do regulatory frameworks within your sector influence environmental sustainability practices?
- 4. How aware are stakeholders within your sector of environmental issues and concerns?
- 5. How do organizations within your sector collaborate to address environmental challenges?
- 6. Rate the level of innovation within your sector towards sustainable practices.
- 7. How does consumer demand influence environmentally conscious practices within your sector?
- 8. How do industry associations and alliances promote environmental sustainability initiatives within your sector?
- 9. Rate the level of commitment to sustainability goals among organizations within your sector.

## Digital Transformation Projects Sustainable Management Performance

- How does your organization integrate sustainability considerations into its digital transformation projects?
- 2. To what extent does digital transformation improve resource efficiency and reduce environmental impact within your organization?
- 3. How effectively does digital transformation enable stakeholder engagement and communication on sustainability matters?
- 4. How does digital transformation enhance transparency and accountability in governance practices within your organization?
- Rate the effectiveness of digital technologies in supporting ethical decision-making and responsible business conduct.
- 6. How does digital transformation contribute to the resilience and adaptability of your organization in addressing environmental and social challenges?
- 7. Rate the level of employee involvement and empowerment in driving sustainable outcomes through digital transformation.
- 8. How does digital transformation impact the overall competitiveness and long-term viability of your organization?