Journal of Research, Innovation and Technologies
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Corporate Social Responsibility, Internal Control, and Corporate Reputation in Light of Digital Transformation Techniques

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Received: 09-30-2025 **Revised:** 11-05-2025 **Accepted:** 11-17-2025

Citation: Saleh, A. F., Khalaf, A. J., Jasim, S. R., Al-Rifai, M. I., Mahdi, A. S., Al-Bilawi, A. S., & Abdulateef, D. A. (2025). Corporate social responsibility, internal control, and corporate reputation in light of digital transformation techniques. *J. Res. Innov. Technol.*, *4*(4), 361–375. https://doi.org/10.56578/jorit040404.

Abstract: This study examines the impact of corporate social responsibility (CSR) and internal control (IC) on corporate reputation (CR) in the context of digital transformation (DT), which serves as a moderating variable. Furthermore, a sample of 324 individuals was selected from the research community of accountants, auditors, and other specialists working in the Iraqi environment, and data were collected using a list of questionnaires analyzed based on a Likert scale. The stability and reliability of the scale were verified using Cronbach's alpha and the split-half method according to Spearman-Brown's value, and several statistical tests were used to verify data distribution and potential bias. In addition, regression models were designed to test four main hypotheses. The results showed a positive impact of both corporate social responsibility and internal control on corporate reputation. Digital transformation technologies (DTT) strengthen the relationship between CSR, IC, and CR. This study offers academic value as it empirically analyzes the impact of those variables in the light of DT as a moderating variable. It also provides management, regulators, and stakeholders with possible strategies in accordance with the business environment, and provides policy implications for promoting institutional development and ESG requirements.

Keywords: Corporate social responsibility; Internal control; Corporate reputation; Digital transformation; Firm value

JEL Classification: M14, M15, M42, O30

1. Introduction

Corporate social responsibility (CSR) is an evolving business model where a firm makes specific efforts to run in a way that serves society and the environment. Carroll proposed a hierarchical CSR concept comprising dimensions: economic, ethical, and philanthropic responsibilities. Legal responsibility indicates the required standard that firms must uphold (Carroll, 1991). In spite of stakeholders' expectations having risen in recent decades, several practices ones considered ethical responsibilities have become legal obligations. For example, hiring female employees and prohibiting workplace discrimination which were moral issues in many countries, are now legally mandated (Zhang & Su, 2023). This shift reflects growing stakeholder emphasis on CSR as a result of globalization on the increasing significance of stability in business operations. CSR has thus evolved from a reactive measure to a proactive managerial approach that enhances a company's public image and long-term competitiveness (Adib et al., 2019).

To effectively implement CSR strategies, many companies today rely on digital transformation technologies (DTT) tools that enable the integration of technology into social and environmental initiatives (Liu & Jung, 2021). For example, in response to pressure from environmental groups to source palm oil responsibly, Unilever developed an AI-based monitoring system that tracks palm oil using satellite and GPS data (Yoo et al., 2024). This is an example of social responsibility implemented through DTT in supply chain management, including the use

of educational materials via DTT. In short, several companies across various industries use digital technology to promote CSR, making these efforts more efficient (Song et al., 2025). Therefore, CSR functions as a management mechanism to build trust among investors, employees, customers, suppliers, and governments. However, due to cultural factors and economic development, CSR levels in emerging countries are lower than those in developed countries (Yoo et al., 2024).

Simultaneously, the 2030 Agenda for Sustainable Development, which was adopted at the UN Sustainable Development Summit in 2015, highlights the need to pursue global sustainable development through DTT (Abdelkarim, 2025). As the mining economy expands, the DT of businesses has emerged as an important factor affecting the global economy. This trend has particularly affected production companies, which are under considerable pressure to use new techniques compared to the service sector (Butt, 2020). In Iraq, where the production industry is an important component of the real economy, the government has promoted DTT in businesses in recent years (Guo & Xu, 2021). The Iraqi government in its latest work report, has nominated "Digital Economy" as a central topic and institutionalized digital changes as a national strategy for the formal development of businesses, making it an important component to achieve high-quality business development (Jameel et al., 2025; Khalaf & Hussein, 2024).

In order to achieve a permanent competitive advantage and promote business value, companies are encouraged, by the government, to participate actively in CSR and DT (Warner & Wäger, 2019). Given their limited resources, however, they should make important decisions on optimal allocation and use of these resources in order to meet social and environmental responsibilities. It is important to develop and implement strategies that effectively utilize DT. To accomplish this matter, it is necessary to install and use an effective approach of IC (Saleh et al., 2025).

Internal control (IC) is considered a comprehensive organizational approach that oversees various activities to achieve a firm's objectives via the effective implementation of strategies (Yoo et al., 2024). An officiant IC enables companies to improve management compliance and operational level, and reduce the risks they face during production (Song et al., 2025). For instance, by providing and reporting reliable information, IC limits risks in terms of information asymmetry and the cost of debt (Carroll, 1991; Zhang & Zhao, 2023). In the case of emerging countries, in 2011, the Financial Supervision Law was issued in Iraq, which aims to organize and develop financial oversight mechanisms for government institutions and the public sector, and includes a set of laws and regulations aimed at fighting corruption and enhancing transparency and accountability in the management of public funds. However, such types of corruption continue to occur as inadequate IC results in financial failure and expelling investment opportunities, and strengthening trust between citizens and the government.

In summary, CSR is a critical requirement for firms to ensure that their operations comply with public expectations (Asogwa et al., 2020). Simultaneously, DT has emerged as an important strategy for achieving and maintaining a competitive edge (Kim et al., 2020). A strong ICS that effectively monitors all the company's activities can strengthen the success of both DTT and corporate CSR. However, today's literature has not discovered how to detect complex interactions between CSR, DTT, IC, and corporate reputation (CR). As a result, the current study develops new models based on stakeholder, resource-based principle, and agent theory, to examine how that interaction affects the firm value between CSR and DTT, as well as IC (Yoo et al., 2024).

2. The Theoretical Framework

2.1 Agency Theory, Stakeholder Theory, Allocated Resources Theory

The study framework and hypotheses will be established based on agency theory, stakeholder theory, and resource-based theory. The three theories' details are explained below.

Agency Theory: In 1932, this theory was first founded by Pearl and Mein (Smith et al., 2017). Later, both Jensen and Meckling in 1976 and 1979 developed an increased awareness of the problem of agency, showing the relationship between superiors and subordinates, where ownership and management were separated (Jensen & Meckling, 1976; Jensen & Meckling, 1979). Therefore, many researchers explained that agency problems can arise due to the mismatch between owners and managers. Thus, the conflict of interests might lead managers to take actions and opportunistic decisions (Saleh et al., 2025). From this standpoint, DT can contribute to the accurate information transfer, increase the transparency of that information, and mitigate the level of information conflict, which leads to alleviating the problem of agency among managers and owners (Gouvea et al., 2022). It also enables IC to improve management risks and provide quality financial reports and contribute to improving the value of the company and thus reducing conflicts between owners and agents (Wu & Zeng, 2022).

Stakeholder Theory: Ansoff is the first person who propose the concept of stakeholder. He believed that the overarching consideration for the company lies in meeting the needs of all stakeholders. Later, redefined the concept of theory as groups or individuals who might be affected by what that institution achieves, and classified them into two categories: internally, such as employees, and externally such as suppliers (Freeman & McVea, 2005). Stakeholder theory focuses on the flexibility that characterizes the objectives of the institution, which helps

it keep pace with the transition from a traditional process that focuses only on economic profits. This is consistent with CSR requirements in terms of balancing environmental and stakeholder interests to maximize earnings. Therefore, it can be considered as an important theoretical basis for CSR contributes to clarifying the entities for which they are responsible. Consequently, to dispel the notion that company directors are merely shareholder agents, they should prioritize the rights and interests of all legitimate stakeholders and strive to satisfy their needs to the greatest extent possible. (McGuinness et al., 2017).

Theory of Based on Available Resources: Penrose was the first one who introduce its concept in 1959, where he pointed out that the firm's growth arises and is reduced based on its unique and rare resources (Kor et al., 2016). One of the most important definitions of the concept of strategic resources is what Barney (1991) explained as those resources that are characterized by rare values, which are difficult to imitate (Barney, 1991). In order for companies to achieve their goal of seeking strategic resources, they should strive to form friendly and collaborative relationships with stakeholders that reflect trust and support among them (Damanpour, 1992). Companies shall also fulfill obligations towards shareholders, investors, bondholders, and governments to secure the same aforementioned goal. Strategic resources can also contribute to maintaining a greater level of external capital, political subsidies, as well as tax incentives.

Numerous studies, however, have shown that the functions performed by firms determine how they gain a competitive advantage. To achieve this, unique resources are necessary for creating value through the allocation and effective use of available assets. Additionally, the development of these resources largely depends on the company's IC function, as long as the value creation processes align with how resources are managed by companies (Yoo et al., 2024).

2.2 Corporate Social Responsibility (CSR)

Bowen (2013) defines from an ethical perspective the concept of CSR, noting that entrepreneurs must make decisions of dealing in accordance with social values and goals (Bowen, 2013). On the other hand, Johnson shows the general frameworks of stakeholders regarding the commitment of companies to the interests of all parties (Johnson, 1973). In other words, companies should not only focus on achieving economic value for shareholders, but must take into account the requirements of all stakeholders, especially society, in terms of ethical, environmental, and social values. This can be established through the level of credibility of the company and the enhancement of its image and reputation through the participation of all parties with information related to social responsibility (Yoo et al., 2024). It is also the cumulative level of reliability that companies create by performing social responsibilities that allows or prevents potential damage to the company's value during crises (Flammer, 2018). In other expression, CSR contributes to the creation of capital through greater support from governments and society alike.

2.3 Internal Control (IC)

The concept of IC refers to the processes and systems established and tracked by the company in order to ensure the integrity of accounting information in its disclosed reports, prevent fraud, and reduce the risk of errors, and irregularities by taking the necessary corrective measures (Yoo et al., 2024). Many studies indicate a strong relationship between CSR and IC (Zhang & Su, 2023). With the ideal control system, managers will work to monitor their behavior towards workers and investors and their compliance with the instructions and legislation regulating the work of these companies, which contributes to enhancing the sense of CSR. For example, companies involved under the Sarbanes-Oxley Act have a negative association between CSR and regulatory system deviations (Saleha et al., 2020). In other words, companies that meet their CSRS' obligations well have higher quality in implementing IC. Conversely, companies that achieve a weak relative commitment to their responsibilities with regard to CSR disclosure information reflect the extent of deficiencies in their ICs' system. Thus, it can be said that the objective of IC and CSR is related to the personality of the company (Song et al., 2025).

Yoo et al. (2024) explain on the association among IC and the firm' s reputation of the institution. For example, based on stakeholder theory, the firm value increases when information reflecting the integrity of the IC system is well disclosed. Society and stakeholders, shareholders, investors, and employees are increasingly confident in companies that are characterized by the quality of an effective control system that contributes to promoting the concept of sustainable development (Saleh et al., 2025). Conversely, weak IC systems may exacerbate the problem of information asymmetry, which increases the risk of manipulation and low level of cooperation between society and governments with these companies (Widagdo et al., 2022). Here comes the role of CSR as an external governance mechanism that performs the functions of the internal governance functions that contributes to enhancing the transparency and reducing the self-interest of the administration, which positively affects the efficiency of strategic objectives and the reputation and performance of the institution (Saleh et al., 2021; Zhang & Su, 2023).

2.4 Digital Transformation Technologies (DTT)

Recently, empirical studies indicate the importance of using modern DTT in firm's value (Jameel et al., 2025). For example, through artificial intelligence techniques such big data analytical tool, blockchain, cloud computing, management could build new organizational structures and new systems that contribute in developing business performance, as well as pursuing continuous competitive advantages in similar markets (Barreto et al., 2025). DTT also contribute to the optimal allocation of resources as well as reduce the impact of uncertainty resulting from external factors on companies through the analysis of effective data flows (Wang et al., 2022).

Furthermore, DTT also affect production efficiency, innovation and performance (Zhang & Su, 2023). Evidences have shown that DT can reduce the level of waste of production, administrative and marketing costs in a way that ensures the optimal allocation of resources in a way that enhances production efficiency and accelerates growth (Ren et al., 2023a). Moreover, it can reduce the external challenges faced by business enterprises, especially at the social level, improve the effectiveness of internal audit, and enhance the productivity of workers by improving the human capital structure and positively impacting the reputation of the enterprise. Another evidence has showed the impact of DT on innovation have also argued that DT increases investors' and society's awareness of companies, particularly those characterized by innovation (Jacoby et al., 2019).

However, recent studies have made some conflicting claims about the impact of CSR and DT on firms' competitiveness (Yoo et al., 2024). The study concluded that DTT is playing a significant role to moderate the positive association among CSR and firm value. Furthermore, (Chen & Zhang, 2024) argue that DTT enhance the value of manufacturing companies without taking into account the potential environmental impact. Guo & Xu (2021) believe that DTT negatively affects the financial form of companies in the short term, which contributes to the laying off of hands that have been working in those companies for years (Guo & Xu, 2021). In contrast, authors claim that only some US digitally entities were improved their performance via what is called "digital-savvy skills, digital intensity and context for action and interaction" (Sousa-Zomer et al., 2020).

3. Literature Review and Study Hypotheses

3.1 The Impact of CSR on the Company's Reputation

Some studies believe that CSR may not be useful to improve the firm's reputation, because of its potential consumption of capital and human resources of the company, which can be used in other productive activities (Lin et al., 2015). However, the findings of the literature of recent studies have mentioned the possibility of using social responsibility to reduce risks, and the acquisition of social status by those institutions resulting from improving relations with stakeholders and their role in protecting the environment and serving society (Chang & Yoo, 2023).

The commitment of organizations to the dimensions of social responsibility with their economic, legal, social, and environmental requirements is the driving force behind strengthening the mental image of the reputation and increasing the profits of companies by improving working conditions, loyalty, and increasing productivity (Zhang & Su, 2023). In the same vein, build collaborative relationships with suppliers (Mendes et al., 2021). Moreover, companies that voluntarily fulfill their social and humanitarian responsibilities can gain support from multiple parties such as the government, thereby increasing public awareness and confidence in their reputations and offering more diverse support (Luo & Bhattacharya, 2009). From an economic and accounting perspective, these companies will be able to determine the financial budget allocated to spend on necessary social responsibility programs such as supporting education, health, and small productive projects (Chang & Yoo, 2023). As well as allocating the necessary resources to improve the quality of products and services provided to customers, the hypothesis is formulated as follows.

H_1: There is a statistically significant effect of CSR on a corporation's reputation.

3.2 The Impact of Internal Control on the Company's Reputation

According to the Committee of Institutions (COSO) definition in 2013, emanating from the American Institute of Certified Public Accountants, which set the guidelines for evaluating the IC's level and risk management in institutions. The goal of IC is to ensure the efficiency, legitimacy, and reliability of operations, management style, and financial reporting (Länsiluoto et al., 2016). Previous studies have also concluded that effective internal control plays a role in reducing the company's cost and risk. Moreover, these studies indicate that IC can play a role in increasing the efficiency of the implementation of strategies and promoting the development of sustainable companies in their economic, social and environmental dimensions, which affects the image and reputation of the company for all relevant parties (Zhang & Su, 2023).

On the other hand, the guidelines for the application of IC objectives—social responsibility issued by the Audit Bureau in 2011 require companies to faithfully fulfill their social obligations regarding corporate governance

objectives. In addition, they set product (service) quality, environmental protection, resource service, employment promotion as well as financial reporting quality as IC objectives. These guidelines increase the practical value of CSR activities through effective internal control. In practice, a good IC system works to limit the risks that companies may face in the process of performing their social responsibilities by increasing risk awareness and improving the way management works (Kim et al., 2017; Yoo et al., 2024). Hence, the following hypothesis can be written as below.

H_2: Internal control positively enhances the improvement of corporate reputation.

3.3 The Moderating Role of DT on the Relationship Between CSR and CR

Recently, DT's adoption has become an important strategy for enterprises in their future economic growth (Ren et al., 2023a). This interest at the government level in accelerating the DT of ministries and public institutions, especially in automating the regulatory and financial processes of transactions, has emerged as a major driving force to promote high-quality development (Achim, 2023).

Among the most prominent references to DTT are those related to big data, cloud computing, and artificial intelligence that help in analyzing and processing internal and external data with high efficiency, which serve the administration in saving effort and time and in decision-making processes (Karim et al., 2022). To realize the scope of business, DT can mitigate the asymmetry of information, quickly meet the needs of various stakeholders (Gouvea et al., 2022), as this is done by sending early alerts and signals to identifies the quality of service and production (Cardinali & De Giovanni, 2022), through automating the operational processes of companies (Vogler & Eisenegger, 2021). Thus, securing and enhancing the sustainability of companies through DTT has become a key issue for members of society, policymakers and companies (Forcadell et al., 2020). According to (Ionaşcu et al., 2022), using DT can help businesses to perform their responsibilities towards social (Ionaşcu et al., 2022). Furthermore. Fintech like AI, Big data analytical tools, and blockchain can be used to effectively address the problems by increasing recordability and traceability.

A study by (Yoo et al., 2024) concluded that there is a positive relationship between CSR and CR, and DT might influence this relationship. Also, a study via Liu et al. (2024) indicates that DT enhances of CSRs by easing financial constraints and enhancing the transparency of IC's information within companies. Study (Sang et al., 2025) indicates that digital transformation significantly enhances companies' performance in ESG by improving resource allocation efficiency. Specifically, the previous study (Baharom, 2025; Ren et al., 2023b; Sang et al., 2025; Yoo et al., 2024) focused on the relationship between TD and social responsibility in advanced economies. Those studies did not examine the combined impact of CSR on CR within the context of DTT. The current study aims to close the gap by build a comprehensive framework that focuses on testing the impact of social responsibility on CR within the context of DTT in an emerging environment. Based on the above, the hypothesis related to the moderating role of DT can be developed according to the following.

H_3: The impact of CSR on CR varies according to the level of DTT.

3.4 The Moderating role of DTT on the Relationship Between IC and CR

Organizations pursuing DT may face significant risks due to the challenges and uncertainties arising from the instability of the digital environment. In this process, and as a governance system that considers stakeholder relationships in a balanced manner, an IC system can mitigate uncertainty and risks associated with business activities (Terentieva et al., 2025; Yoo et al., 2024). Li et al. (2024) also claim that DT enhances the effectiveness of internal controls. Consequently, companies strengthen the DT mechanism, which facilitates effective government integration, increases the productivity of production factors, improves the executive structure, coordinates the digital strategy, and helps companies provide understandable reporting. A study (Yoo et al., 2024) IC strengthens the link between DT and firm value.

Furthermore, digital technologies have greatly enhanced the transparency of internal information, reduced improper manipulation of processes, improved stakeholders' ability to oversee information, and thus enhanced CR (Fu, 2025). In addition, Baharom (2025) emphasizes the integration of advanced digital technologies such as artificial intelligence, continuous auditing and blockchain to improve IC processes. Specifically, Baharom (2025) and Yoo et al. (2024) focus on the association between DT and IC in advanced economies. These studies however, have not examined the combined impact of IC on firm reputation within the context of DTT. This is where the gap lies in this study, which aims to build a comprehensive framework that focuses on testing the impact of IC on organizational reputation within the context of DTT in an emerging environment. Based on the above, the hypothesis related to the modified role of DT can be developed according to the following.

H_4: The Impact of IC on CR varies according to the level of use of DTT.

Furthermore, the hypothetical framework of the study can be illustrated as in Figure 1.

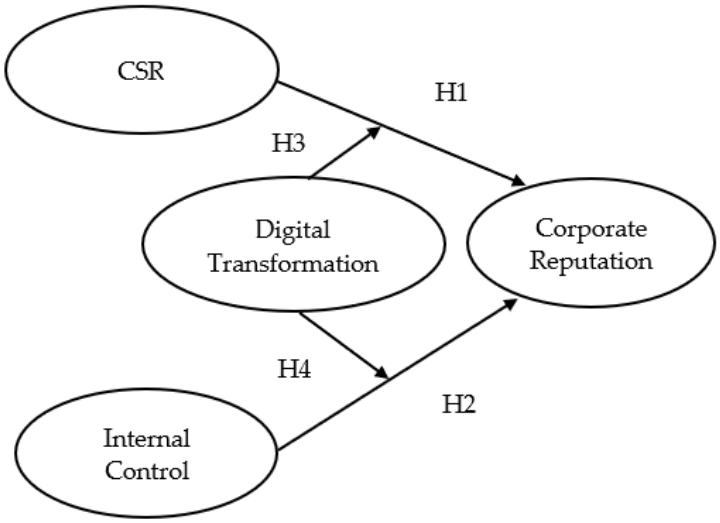

Figure 1. The conceptual framework of study variables

4. The Practical Part

4.1 Research Sample

Researchers conducted field research to analyze the opinions of a sample of (324) individuals drawn from the research community represented by accountants, auditors, and academics in the Iraqi environment. To reduce potential response bias, several procedures were implemented, such as using anonymity safeguards, analyzing confirmatory factors to ensure the validity of the discrimination, and testing the reliability and validity of the scale using Cronbach's alpha and the split-half method, and the data distribution test. The sample can be described based on a number of characteristics, as shown in Table 1.

Table 1. Description of the sample

Specimen Details	Characteristics	Duplicate Count	Percentage %
Gender	Male	284	87.7
	Female	40	12.3
	Total	324	100
Age	Under 40-year-old	185	57.1
	40–49 years old	106	32.7
	50–59 years	24	7.9
	More than 60 years old	9	2.3
	Total	324	100
Academic qualifications	Diploma	16	4.9
	Bachelor	60	18.5
	Master's	160	49.4
	Doctorate	88	27.2
	Total	324	100
Specialization	Accounting (n.)	52	16
	Management	80	24.7
	Economy	108	33.3
	Other	84	25.9
	Total	324	100
Years of experience	Less than 5 years	196	60.5
	6–10 years	76	23.5
	11 to 15yrs	23	7.1
	> 15 years	29	9
	Total	324	100
Type of work	Academic	152	46.9
	Accountant	104	32.1
	Auditor	40	12.3
	Other	28	8.6
	Total	324	100

4.2 Research Methods

The study data was collected using the questionnaire form that was designed according to the research objectives and hypothesis testing, as it was divided into five axes: The first axis: relates to the personal and functional information of the respondent (gender, age, scientific specialization, job title and duration of experience), The second axis: relates to social responsibility accounting and consists of (8) phrases, while the third axis: relates to internal control and consists of (7) phrases, while the fourth axis: relates to the reputation of the institution and consists of (8) phrases, and finally the fifth axis: relates to digital transformation and consists of (8) phrases. The paragraphs of these axes are answered according to the five-paragraph scale (Likert scale).

4.3 Scale Validity Test

The stability and validity of the scale shall be verified using (Cronbach Alpha) and (Split-half) method according to the Spearman Brown value as shown in Table 2.

Table 2. Scale stability coefficients

Variable	Number of Items	Cronbach Alpha	Split-Half
CSR Accounting	8	0.812	0.770
IC	7	0.852	0.685
CR	8	0.882	0.868
DT	8	0.935	0.911
Total	**31**	**0.952**	**0.835**

Table 2 confirms that the value of the stability coefficient is very high for the total questionnaire, as it reached 95% by the Cronbach alpha method, while it reached 83% by the halving method, which indicates the validity and stability of the scale, which makes researchers confident in its validity and validity to analyze the results and test the hypotheses.

4.4 Data Distribution Test

The researchers based on the value of the torsion and kurtosis coefficient, to determine the type of parametric and non-parametric statistical tools that can be relied upon in the hypothesis test. If the value of the torsion coefficient lies between the range (+1 and -1) and the value of the kurtosis coefficient between the range (+3 and -3), this indicates the moderation of the research data and that it is close to the normal distribution, and Table 3 shows this.

Table 3. Data distribution

Variable	Skewness	Kurtosis
CSR	-0.648	0.205
IC	-0.943	1.081
CR	-0.959	1.173
DT	-1.038	0.927

It is clear from Table 3 that the values of the variables fall within the range of the torsion and kurtosis coefficient. Therefore, it can be said that the research data are approaching to be normally distributed. Therefore, the statistical tools can be adopted in testing the research hypotheses.

5. Results and Discussion

Descriptive statistical analysis was used to characterize the statements indicating the impact of CSR and internal control on the reputation of the institution in light of the DT, as well as the adoption of the (t) test for one sample, and the correlation coefficient and linear regression.

5.1 Descriptive Analysis of Research Variables and Dimensions

Table 4 presents the total results of the average statements of each of the questionnaire axes and the research variables as follows:

Table 4. Descriptive analysis

Variable	Mean	S. D	Relative Importance	T		Confidence Interval		Direction
				T-value	Sig.	Min.	Max.	
CSR	3.592	0.6232	0.7184	103.75	0.000	1.625	4.875	Agreed
IC	3.760	0.6736	0.752	100.470	0.000	1.714	5.000	Agreed
CR	3.671	0.6818	0.7342	96.91	0.000	1.250	4.875	Agreed
DT	3.697	0.8082	0.7394	82.35	0.000	1.000	5.000	Agreed

It is clear from Table 4 that the opinions of the research sample are positive, as the relative importance of the variable (SRA) reached (71%), which is in the range of approval, and that the confidence period is between (1.625–4.875), which is greater than the average value of the five-point Likart scale of (3), and the value of (t) is greater than its tabular value at a significant level (0.000), and the relative importance of the variable (IC) reached (75%), which is in the range of approval, and that the confidence period is between (1.714–5.000), which is bigger than the average value of the five-point Likart scale of (3), and the value of (t) is greater than its tabular value at a significant level of (0.000), as for the (CR) variable, the relative importance is (73%), which is in the range of approval, and that the confidence period ranges between (1.250–4.875), which is greater than the average value of the five-point Likart scale of (3), and the value of (t) is greater than its tabular value at a significant level of (0.000), while the relative importance of the (DT) variable reached (74%), which is in the range of approval, and that the confidence period is between (1.000–5.000), which is greater than the average value of the five-point Likart scale of (3), and the value of (t) is greater than its tabular value at a significance level (0.000). Accordingly, most of the opinions of the sample agree on the phrases of the study variables, but there is a difference between them in terms of the rise in the values of the standard deviation.

5.2 Linear Correlation Test

The Pearson correlation coefficient measures the direction and strength of the association among the research variables. Table 5 shows the values of the correlation coefficient as follows:

Table 5. Correlation between the variables

Variable		CSR	IC	CR	DT
CR	Pearson	0.565**	0.676**	1	
	Moral (Sig.)	0.000	0.000		
	N	324	324	324	
DT	Pearson	0.794**	0.604**	0.740**	1
	Moral (Sig.)	0.000	0.000	0.000	
	N	324	324	324	324

Table 5 shows the following:
- There is a positive and significant association among CSR and CR.
- There is a positive and significant association among IC and CR.
- There is a positive and significant association among DT and CSR.
- There is a positive and significant association among DT and IC.
- There is a positive and significant association among DT and CR.

5.3 Partial Correlation Test

Partial Correlation was utilized to test the partial association among the variables of these four research, as follows:

Table 6 shows the result of testing the difference between CSR and the reputation of the institution according to the difference in DTT.

Table 6. Partial relationships test

Variable		Corporate Reputation (CR)	
		Exclude (DT)	Not Exclude DT
CSR	Pearson	-0.054	0.565**
	Moral (Sig.)	0.634	0.000
IC	Pearson	00.428**	0.676**
	Moral (Sig.)	0.000	0.000

It is noted from Table 6 that when DTT are excluded, the positive moral relationship between CSR with the reputation of the institution has become non-significant and negative, while it is noted that the positive moral relationship between IC with the reputation of the institution has become slightly less positive, which indicates that DT strengthens the relationship between CSR and firm's reputation.

5.4 Hypotheses Test

First Hypothesis: The regression equation can assess the possibility of improving the reputation of the institution in terms of social responsibility accounting, to determine the extent to which the latter affects the corporate reputation, and the regression equation can be formulated as follows:

$$\mathbf{CR} = \beta_0 + \beta_1 CSR + \varepsilon$$

Table 7. Testing the first hypothesis

Variable	R^2	Adjusted R^2	F	Sig.
	0.319	0.311	37.030	0.000
CSR	**(β0)**	**(β)**	**T**	**Sig.**
	1.697	0.516	0.085	0.000

Table 7 includes the regression analysis results, shows the stability of the validity of the regression model in terms of the value of (F), which amounted to (37.030) at a level of statistical significance of less than (5%), which means that the reputation of the institution can be improved through CSR, and this confirms the validity of the model, while the value of (T), which amounted to (6.085) at a level of significance of less than (5%), indicates the significance of the impact of CSR on the reputation of the institution, while the positive value of (β), which is (0.516), indicates the positive impact, and the value of (R^2), which is (0.319), indicates that CSR explains (31%) of the changes that occur in the reputation of the institution. Based on the above, this result is consistent with his study (Yoo et al., 2024), as well as with the stakeholder theory that focuses on balancing environmental and stakeholder interests to achieve a level that will maximize the overall profit of the company's long-term development (McGuinness et al., 2017). Thus, organizations' commitment to the CSR dimensions of their economic, legal, social and environmental requirements is the driving force behind strengthening the mental image of reputation and increasing corporate profits (Mendes et al., 2021).

Second Hypothesis: The regression equation can be used to assess the possibility of improving the reputation of the institution in terms of IC, in order to determine the extent to which the latter affects the reputation of the institution. The regression equation can be formulated as follows:

$$\mathbf{CR} = \beta_0 + \beta_1 IC + \varepsilon$$

Table 8. Second hypothesis testing

Variable	R^2	Adjusted R^2	F	Sig.
	0.457	0.450	66.514	0.000
IC	**(β0)**	**(β)**	**T**	**Sig.**
	1.308	0.668	8.156	0.000

It is clear from Table 8, which includes the results of the regression analysis, that the validity of the regression model is fixed in terms of a value (F), which amounted to (66.514) at a level of statistical significance less than (5%), which means that the reputation of the institution can be improved through the IC system, and this confirms the validity of the model, while the value of (T), which amounted to (8.156) at a level of significance less than (5%), indicates the significance of the impact of IC on the reputation of the institution, while the positive value of (β) (0.668) indicates the positivizes of this impact, as well as the value of the coefficient of determination (R^2) of (0.457) indicates that internal control explains (45%) of the changes that occur in the reputation of the institution.

Based on the above, this finding is consistent with the Agency's theory that IC enables improved management risk and quality financial reporting and contributes to improving the value of the company and thus reducing disputes between owners and agents (Yoo et al., 2024).

Furthermore, the goal of IC is to ensure the efficiency, the legitimacy, and the reliability of operations, management practices, and financial reporting (Länsiluoto et al., 2016). Effective IC plays a role in reducing company costs and risks. Moreover, IC can contribute to increased efficiency in strategy implementation and promote the development of sustainable businesses in their economic, social, and environmental dimensions, thereby impacting the company's image and reputation among all stakeholders (Zhang & Su, 2023). The findings

of this study are consistent with those of (Jie & Lan, 2024; Kim et al., 2017).

Third Hypothesis: For the purpose of testing this hypothesis, a regression model will be prepared to estimate the reputation of the institution in terms of CSR and DTT as an interactive variable, in order to examine the extent to which the latter affects the reputation of the institution. The following linear regression model can be formulated:

$$\mathbf{CR_{it}} = \beta_0 + \beta_1 SRA + \beta_2 DT + \beta_3 (SRA * DT) + \varepsilon$$

Table 9. The result of the third hypothesis

	R^2	Adjusted R^2	F	Sig.
Variable	0.548	0.537	47.362	0.000
	(β0)	**(β)**	**T**	**Sig.**
CSR		-0.065	-0.478	0.634
DT	1.451	0.664	6.293	0.000
CSR-DT		-0.130	-0.478	0.000

It is noted from Table 9 that the validity of the linear regression model is fixed through the value of (F) of (47.362) at a level of statistical significance less than (5%), which means that the reputation of the institution can be estimated in terms of CSR and DT as an interactive variable, which confirms the validity of the regression equation, while the value of (T) at a level of statistical significance less than (5%) indicates the significance of the impact of DT as an interactive variable in the impact relationship of the CSR variable in the reputation of the institution, while the negative value of (β) for (CSR-DT) indicates the negative of this impact, and the adjusted coefficient of determination (Adjusted R^2) of (0.537) indicates that DT as an interactive variable along with CSR explains 54% of the changes that occur in the reputation of the institution.

Based on the statistical results, our results correspond to the results of the study (Gangi et al., 2019), indicating that CSR has become a strategic factor to improve performance. Thus, securing and promoting corporate sustainability through DTT has become a key issue for community members, policymakers and companies (Forcadell et al., 2020). The DT moreover enables firms to performance their social responsibilities in better way (Ionaşcu et al., 2022).

Specifically, DTT reduces the positive impact of social responsibility on CR, perhaps because the Iraqi business environment is still experiencing less mature beginnings of digital transformation (Phornlaphatrachakorn & Kalasindhu, 2021; Zhang & Zhao, 2023). In addition, companies may witness an increase in investment in digital systems, which leads to competition in resources between digital transformation and social responsibility initiatives, which places additional burdens on these initiatives and weakens their repercussions on the reputation of companies, not because of the weakness of the initiative itself, but because it is affected by changing management priorities and resource allocation (Masoud & Basahel, 2023; Zou et al., 2024).

Fourth hypothesis: For the purpose of testing the impact of IC on the reputation of the institution varies according to the difference in digital transformation techniques, a multiple linear regression model will be prepared to estimate the reputation of the institution in terms of IC and DT as an interactive variable, to examine the extent to which the latter affects the reputation of the institution. The following linear regression model can be formulated:

$$\mathbf{CR} = \beta_0 + \beta_1 IC + \beta_2 DT + \beta_3 (IC * DT) + \varepsilon$$

Table 10. The multiple linear regression model

	R^2	Adjusted R^2	F	Sig.
Variable	0.635	625	67.704	0.000
	(β0)	**Regression coefficient (β)**	**T**	**Sig.**
IC		0.384	4.388	0.000
DT	1.451	0.664	6.293	0.000
IC-DT		0.910	8.204	0.000

It is noted from Table 10 that the validity of the linear regression model is fixed through the value of (F) of (67.704) at a level of statistical significance less than (5%), which means that the reputation of the institution can be estimated in terms of IC and DT as an interactive variable, and this confirms the validity of the regression equation, while the value of (T) at a level of statistical significance less than (5%) indicates the significance of the impact of DTT as an interactive variable in the impact relationship of IC variable in the reputation of the institution, while the positive value of (β) for (IC-DT) indicates the positivizes of this impact, and the adjusted coefficient of determination (Adjusted R^2) of (0.525) indicates that DT as an interactive variable in addition to IC explains 63% of the changes that occur in the reputation of the institution. Based on the statistical results, and after these

considerations are met, it can be said that the fourth hypothesis is accepted (the impact of IC on the reputation of the institution varies according to the difference in DT).

Effective internal controls can mitigate uncertainty and risks associated with business activities and facilitate the adoption of DT (Yoo et al., 2024). This technology, in turn, enhances the effectiveness of internal controls. Consequently, companies strengthen their DTT which facilitates effective government integration, increases factor productivity, improves the executive structure, coordinates digital strategy, and helps companies achieve high-quality development (Li et al., 2024). Furthermore, digital technologies have significantly enhanced the transparency of internal information, reduced improper manipulation of processes, and improved stakeholders' ability to oversee information, thereby enhancing corporate reputation (Fu, 2025). Additionally, a study by Baharom (2025) emphasizes the integration of advanced DT, such as AI and blockchain to improve internal audit processes. Specifically, the findings of this study are consistent with those of (Baharom, 2025; Li et al., 2024; Yoo et al., 2024).

After analyzing the responses of accountants and auditors, for example, DT has improved the accuracy of reports and increased the speed of response to IC's processes, which confirms that DT improves the effectiveness of internal control and enhances companies' ability to build a strong corporate reputation (Vogler & Eisenegger, 2021; Zhang & Su, 2023). Therefore, effective IC supported by efficient digital architectures sends signals to users that these companies seek transparent and rational governance, which enhances their reputation and value in the market (Jameel et al., 2025; Treepongkaruna, 2024).

6. Conclusion

First, corporate social responsibility seeks to improve the market value and optimal consumption of company resources, which maximizes the interests of stakeholders. Recently in the business world, CSR is considered an opportunity and strategy that serves the company's reputation. From this perspective, our findings demonstrated that CSR activities had a positive ethical impact on company value and reputation.

Second, empirical studies show that the function of internal control is to further improve company performance and foster a positive relationship between corporate social responsibility and company reputation. The results of the current study indicate that effective internal control helps protect the interests of stakeholders, enhances stability and performs important strategic functions to reduce potential risks and uncertainties associated with digital transformation from adopting qualitative economic strategies directed towards sustainable development.

Third, turning to the importance of the impact of digital transformation as an interactive variable in the relationship between corporate social responsibility and the organization's reputation, the results showed that 54% of the changes that occur in the organization's reputation and performance are the result of implementing digital transformation mechanisms. The impact of digital transformation has been weak, perhaps because the Iraqi business environment is still witnessing less mature beginnings in adopting digital transformation initiatives, in addition to regular and cultural issues. This places additional burdens on these initiatives and has repercussions on the reputation of companies, not because of the weakness of the initiative itself, but because it is affected by changing management priorities and resource allocation.

Fourth, the study also explored the positive DT's influence on the relationship between IC and CR, which is consistent with evidence in the literature review. Such technologies are significantly enhancing the transparency of information, reducing improper manipulation of financial processes, and enhancing stakeholders' trust. Although the data were collected from a sample of accountants, auditors, and other professionals working in the Iraqi environment, the findings of this study could offer valuable insights into emerging markets characterized by digital technology adoption, given that Iraq is a unique emerging market context. However, these results should be interpreted within this context, and they are generalizable to environments with similar institutional conditions.

Moreover, this study has several implications for regulators by providing useful information that supports the development of effective business policies. At the investor level, this study can help them make decisions by evaluating investment returns and risks. In addition, it affects stakeholders by increasing transparency in reporting and communication and enhancing the reputation of companies.

7. Limitations and Future Studies

First, the authors relied on an academic questionnaire, the Iraq Stock Exchange database. The current study does not reveal the results of evaluating the detailed elements divided into shareholder, employee, supplier consumer rights, and environmental responsibilities. Therefore, this study did not provide information on the discriminatory effects on CSR subsectors. If possible, a study is conducted in which actual financial data are available to analyze and present the impact of the interaction between the sub-region and DT on the company's value, which can help remove these obstacles.

Second, Future studies could expand the scope of this study to include other countries or compare the results with countries that have varying levels of corporate governance practices and digital maturity. The study

recommends using the content analysis method to measure the level of DT and link it to the level of quality of reports, financial disclosure, and financial performance, or the risk management committee and attracting foreign investment, and cybersecurity risks as a tool of financial technology as alternative variables.

Author Contributions

Conceptualization, validation, methodology, investigation, statistical analysis, and writing the original draft, A.F.S. and A.J.K.; analysis improvement, review and editing, supervision, D.A.A.; redesigning the experiments/collecting important additional data to strengthen the results, software, statistical analysis, contributed to discussing the conclusions, M.I.A., A.S.M. and A.S.A; reviewing the literature, drafting parts of the introduction and discussion sections, improving the linguistic style of the draft, S.R.J. All authors have read and agreed to the published version of the manuscript.

Data Availability

The data used to support the research findings are available from the corresponding author upon request.

Conflicts of Interest

The authors declare no conflict of interest.

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