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# Impact of CSR, innovation, and green investment on sales growth: new evidence from manufacturing industries of China and Saudi Arabia

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## ABSTRACT

Environmental concerns have got supreme interest from the researchers and policy makers for which experts have revealed their organizational impacts too. At the same time, corporate social responsibility is observed as a key determinant of financial performance both in developed and developing economies. Recognize the same, this study aims to examine the impact of corporate social responsibilities, economic innovation, green credit, and green investment on the sales growth of manufacturing industries of China and Saudi Arabia. This study has selected top twelve trading manufacturing companies registered in the Shanghai stock exchange and Saudi stock exchange during the period of 2016 to 2020. For data estimation, panel regression estimations like fixed and random effect models have been used. The results indicate that corporate social responsibility, economic innovation, green credit, and green investment are significantly and positively associated with sales growth of manufacturing industries in China and Saudi Arabia. However, their coefficient's magnitude varies due to distinct features of both countries. These findings offer valuable policy recommendations for all stakeholders.

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Corporate social responsibility; economic innovation; green credit; green investment; sales growth

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## 1. Introduction

Since last decade to date, organizations are trying to enhance their sale growth by staying active in their relative market places while focusing on innovative capabilities,

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quick response to the customers, corporate social responsibility (CSR) and environmental requirements (Ahmad et al., 2021; Li et al., 2020; Yao et al., 2019). The increasing of complexity for the products and services, rapidly changing market demands, and shorter life cycles required different level of management capabilities and management practices so that a successful competitive advantage along through innovations would be developed and sustained (Rauter et al., 2019). At the same time, innovation has traditionally been recognized as led by developed economies, however, actors in the emerging countries have now become aware about the significance of research and development investment, and development in terms of technological capabilities as well (Lingyan et al., 2021; Sharif et al., 2019, 2020). In this regard, different scholars have put a spotlight towards the idea of technological innovation specifically for the emerging economies which are rapidly growing in the world while showing their apparent importance too (Choi & Williams, 2014; Sharif et al., 2021; Wang et al., 2021). In some studies, the results of innovations are normally examined in terms of innovative output like increasing sales from new product or services, or frequency of new product launches (Sofka & Grimpe, 2010). However, such types of performance measures are intuitive in nature as they are directly associated with the innovation outcomes. In this regard, researchers have supported the concept that impact of innovation on the general performance outlook like sales growth, profit or total market share of the product may be examined which is under consideration attention (Canh et al., 2019). More specifically, it is a competitive advantage for a firm to have a higher market share with innovative products.

In addition, it is believed that companies can purposefully employ their CSR efforts which outline their moral commitments to promote society's welfare as part of their commercial operations to improve their financial performance (Peters & Mullen, 2009; Samy et al., 2010; Statman & Glushkov, 2009). This is supported by a slew of studies that look at the links between companies' CSR policies and their financial results, which are often measured using accounting-based metrics like profitability and investor contributions (Orlitzky et al., 2003; Rodgers et al., 2013). Meanwhile, the literature work in the field of CSR and business ethics has normally asked: What is the performance outlook for the socially responsible and ethical firms? While the research work regarding the association between CSR and firm performance has been observed on a fruitful manner, however, most of the studies have been conducted on the public firms specifically in the North America and Europe whereas little has been known about CSR and its influence on the success of different firms in developing region as well (Cui et al., 2015). However, it is unclear whether kind of CSR activities can boost sales growth, and experts are divided on the exact link between CSR and sales growth (Brammer & Pavelin, 2006; Peters & Mullen, 2009; Rodgers et al., 2013). While some studies show that CSR strategies generate profit and higher returns on investments (Brammer & Pavelin, 2006; Hellsten & Mallin, 2006; Statman & Glushkov, 2009; Torugsa et al., 2012), others show that CSR strategies have a negative impact on sales growth (Inoue et al., 2011; Hirigoyen & Poulain-Rehm, 2017). Additionally, some studies have shown their mixed or neutral association between CSR and sales growth (Margolis & Walsh, 2003; McWilliams & Siegel, 2000). The variety of business sales performance utilized within different

accounting and economic frameworks for calculating the CSR effect might be attributed for the disparities in conclusions (Margolis & Walsh, 2003; Rodgers et al., 2013). This would justify the argument that still there is a literature gap while exploring the association between CSR and firm performance as measured through sales growth specifically in the emerging economies.

Because of the shift in the business paradigm from single P (profit) to Triple P (Profit, People and Planet) to entice potential shareholders, a number of publicly traded corporations have undertaken green investments. Green investment (GI) is described as a company's attempts to manage environmental challenges by lowering the negative impact of commercial operations on the environment while increasing sales (Berliner & Prakash, 2013; Ferreira et al., 2014). Green investment is thought to boost a company's competitive edge, reputation, and value (Bonifant et al., 1995). As a result, a number of research have been conducted to look at the factors that influence GI and business growth (Razzaq et al., 2021, 2021a). Unfortunately, past research in the business context has concentrated on environmental disclosure (Banasik et al., 2010; Barbu et al., 2014; Iatridis, 2013) and firm's selling performance (Banasik et al., 2010; Barbu et al., 2014; Iatridis, 2013; Wahba, 2010). Furthermore, the majority of the research were done in industrialized nations, whereas equivalent studies on GI in growing countries, such as China and Saudi Arabia are not under significant attention in the literature till date.

In addition, the development of social progress index and economic activities leads to governmental consideration for the environmental challenges and related issues. In this regard, green credit policy specifically in Chinese economy as observed as a part of sustainable finance while putting some restrictions precisely on the manufacturing activities in order to lower down the pollution factor of the environment (He et al., 2021; Nabeeh et al., 2021; Sun et al., 2021). Turning towards the economy of China, it is observed that to assure the execution of green credit regulations, Chinese authorities produced a set of proposed rules titled 'Opinions on the Implementation of Environmental Protection Policies and Regulations for Credit Risk Prevention' in 2007 (Ling et al., 2021). This was the first time in China that the execution and scope of green loans were explicitly suggested, as well as the departments' duties and information transmission mechanisms. China has also created green credit laws, green credit standards, and similar strategic policies throughout the previous decade, laying the groundwork for controlling demand for energy saving and carbon reduction through financial leverage. Green credit outstanding at China's 21 major banks financial institutions reached 7.26 trillion Yuan by the end of June 2016, accounting for 9% of total outstanding loans. Loans for energy conservation and environmental protection, new energy, new energy vehicles, and other important emerging sectors totaled 1.69 trillion Yuan, with 5.57 trillion Yuan going to projects and services for energy conservation and environmental protection.

The aim of our study is to analyze the relationship between economic innovation, CSR, green credit, and green investment, and sale growth in the economies of China and Saudi Arabia. In doing so, top 20 trading manufacturing companies listed in the stock exchange of China and Saudi Arabia were selected. More specifically, China is an upper-middle-income economy, while Saudi Arabia is a high-income economy

and has great relevance for cross country analysis. More than 65% Chinese products are in the usage of world economy and global customers (Murmah & Zhu, 2021), whereas Saudi Arabia is majorly growing on crude oil (Al-Dhabaan, 2021). In this study, we have compared China and Saudi Arabia on the basis on manufacturing sector's growth of sales during 2016 to 2020. To the best of the researcher's knowledge, existing literature is widely missing for exploring the both of these economies while taking into account the proposed variables.

The study contributes to literature in the following ways. First, this is a very first attempt through which the impacts of economic innovation, CSR implication, green credit and green investment on sales growth have been examined collectively for both China and Saudi Arabia. The past literature has examined the impacts of economic innovation, CSR implication, the utility of green investment, and sales growth (Nawaz et al., 2021; Shair et al., 2021). However, studies are still lacking for paying to economic innovation, CSR implication, the utility of green credit and green investment along with the sales growth in both of the targeted economies. For example, the study by Nurunnabi (2017) examines the influences of economic innovation, research work of Palmer et al. (2018) explores trends in CSR implementation, and Morais et al. (2018) present their views on the impact of green credit and green innovation on the growth of sales, separately. Thus, the impact of economic innovation, CSR implication, the utility of green credit and green investment towards sales growth is of missing part in the literature till date.

The rest of the paper is structured into five sections. After the introduction, section 2 is dealing with the literature review; section 3 covers data and methodology; section 4 represents the results through quantitative analysis whereas conclusion and recommendations are presented in section 5.

## **2. Literature review in theoretical prospect and hypothesis**

### **2.1. Green investment and sale growth**

Companies actively seek and maintain legitimacy, according to legitimacy theory, by matching their principles, policies, and tactics with community values. Green investment may be viewed as a method for a corporation to earn and retain credibility. The rationale for this is that green investment allows businesses to manage their environmental impacts by reducing energy usage, carbon emissions, and other negative effects (Peters & Mullen, 2009; Samy et al., 2010; Statman & Glushkov, 2009). Companies' reputations and competitive advantages can both benefit from green investments (Orlitzky et al., 2003; Rodgers et al., 2013). Success in resolving environmental challenges can boost a company's revenues in the long run (Jackson & Singh, 2015; Orellano & Quiota, 2011; Rodgers et al., 2013; Teng et al., 2014). Chen and Ma (2021) have examined the association between green investment and firm performance while taking into account the micro-level data during 2008–2017. The study findings confirm that green investment is leading towards positive trends in financial performance. Furthermore, the investment in those projects like energy conservation and emission reduction would reasonably help to improve the financial outcomes. At the same time, green investment is a good sign towards reducing the environmental

violation and improve environmental performance on long-term basis. Square et al. (2020) consider the causal relationship between green investment and firm performance. The study findings confirm that green investment could improve the firm's performance under short-run estimation. Indriastuti and Chariri (2021) have also examined the association between green investment and performance in terms of sustainable business practices and financial performance as well. They have taken into account 132 manufacturing firms as working in the region of Indonesia and listed in regional stock exchange during 2016–2019. The study findings confirm that green investment is significantly linked with the financial performance. Based on the above arguments, it is inferred that green investment is a good indication in determining the positive trends in corporate's financial performance like sales growth. For this reason, following H1 is determined:

*H1: Green investment positively affects firm sales performance.*

## **2.2. Green credit and sales growth**

The association between green credit and performance dynamics like sales growth has also attained the researchers' attention. However, these studies have been observed with the mixed findings both in the recent and past studies. Furthermore, green credit has been shown in several studies to have a favorable impact on business operations. According to institutional theory, Green Credit Guidelines may have a negative impact on both corporate sustainability and financial performance of while putting them under pressure (Phan & Baird, 2015). Weber (2017) look at the different reports and databases of Chinese companies while examining their sustainability aspects through panel regression and Granger causality tests. It is inferred that during 2009–2013, environmental and social performance of Chinese companies have been improved dramatically. Furthermore, a bi-directional causation between financial success and business sustainability has been discovered. In addition, when adjusting for variables such as the non-performing loan ratio and total assets, Sun et al. (2020) and Liao et al. (2019) discovered that green credit had a favorable effect on sales operational efficiency in the short run. However, such effect is observed as stable under long-run estimation. Cui et al. (2018) consider 24 Chinese non-financial enterprises to examine whether a greater green credit ratio decreases sales through panel regression estimation. The findings reveal that assigning more green loans to the total loan portfolio reduces growth. However, Chinese Green Credit Policy's institutional pressure has its favorable impact on enterprises' environmental and financial performance. Luo et al. (2017) investigate the impact of green credit towards the financial performance and operational efficiency through Hybrid econometric models. Data was collected for the Chinese-listed firms during 2007–2015 where the study finding confirm that the issuance of green credit loans does not improve the operational efficiency and financial performance of selected companies during the study period. Based on the above arguments, following H2 has been proposed.

*H2: Green credit positively affects firm sales performance.*

### **2.3. CSR and sale growth**

The linkage between corporate social responsibility and firm performance has also got some reasonable attention from the researchers (Adams, 2008; Deegan, 2002; Margolis & Walsh, 2003; Visser, 2011). Meanwhile, Legitimacy theorists, for example, have argued that companies should be required to operate in accordance with societal norms and values (Bhattacharyya, 2014; Nurhayati et al., 2016). They demand that firms' value systems should be established and executed in order to fulfill social expectations (Nurhayati et al., 2016). The legitimacy theory has revealed corporations' motivations for voluntary environmental disclosures and demonstrated firms' commitment to reducing carbon emissions and improving an environmentally friendly society (Deegan, 2002), which has implications for their financial performance too. Its voluntary appropriation, on the other hand has led to critiques that the legitimacy theory just explains management behaviors without specifying what needs to be done (Mobus, 2005; Suchman, 1995). Research investigations showing positive (Flammer, 2013; Gatsi & Ameyibor, 2016) negative (Hirigoyen & Poulain-Rehm, 2017; Inoue et al., 2011; Naser & Hassan, 2013) and mixed and inconsistent findings of the associations between CSR and sales growth (Adeneye & Ahmed, 2015; Margolis & Walsh, 2003) or even neutral effect (McWilliams & Siegel, 2000). More specifically, Cui et al. (2015) have examined the association CSR and firm performance for the listed firms in China. Their study has observed some mixed findings both small and large firms where the former (having 100 or fewer employees) are showing negative linkage between commitment to CSR and sales growth, whereas later (greater than 1000 employees) are showing positive association between CSR and sales growth, respectively. Choi et al. (2010) examine the impact of CSR on financial performance for the Korean firms during 2002–2008 with a sample of 1122 firms. For measuring the CSR, both equal-weighted CSR index, and stakeholder's weighted CSR index have been utilized. The study findings confirm a significant and positive association between CSR and financial performance. Based on these findings, following H3 is suggested:

*H3: CSR positively affects firm sales growth performance.*

### **2.4. Economic innovation and sale growth**

The title of research and development (R&D) and sales growth are two significant drives for companies seeking to get a competitive edge in the marketplace (Askenazy et al., 2016). The ultimate purpose of R&D expenditure is to increase the company's economic performance (Jin et al., 2018). On the one hand, R&D operations may provide corporations with innovative goods and processes while giving a superior market position over their rivals. Meanwhile, R&D expenditure indicate the product differentiation and quality and both of are useful to increasing the firm's value as well (Shim et al., 2016). A number of theoretical models demonstrate that the financial performance can be seen as being a function of R&D (Connolly & Hirschey, 1984; Paton, 2002). The existing empirical evidence on the relationship between R&D and firm sale growth is mixed. An early study by Nakao (1993) reported that R&D is important in determining a firm's profitability and industry concentration. Hirschey and Weygandt

(1985) subsequently tested their linkage and pointed out that both the R&D intensity and growth positively affect firm's performance. However, Han and Manry (2004) and Li et al. (2013) argued that the R&D expenditure has a positive impact on the stock price and negative impact on sales. Su and Yue (2009) findings show that R&D and sale expenditures significantly affect the main operating profit of Chinese pharmaceutical companies. Another notion is that those firms that thrive in innovation grow prosperously while increasing their market shares too. This would claim that research and development expenditures are directly linked with the financial performance for which following hypothesis is developed:

*H4: Innovation expenditure has a positive impact on the Sale growth.*

### 3. Data and methodology

#### 3.1. Data overview

The study uses the firm level panel data from 2016 to 2020 and chooses 12 nonfinancial firms from manufacturing industries listed in Shanghai stock exchange and Saudi stock exchange. Total 60 observations have been collected from each firm from annual financial reports, CSMAR database and stock exchange databases during the study period.

#### 3.2. Variable construction

Sale growth is dependent variable and calculated through subtracting the firm's current period net sales from last period sale divided by the net sales of the prior period. This measure of sale growth has been observed from the research contribution of Nyame-Asiamah and Ghulam (2019). Firm innovation is used as independent variable and measured by annual R&D budget as a percentage of annual sales. In this regard, Mithani (2017) use the ratio of innovation expenses and total expense. Data for the CSR has been collected from the annual reports of the companies where content analysis was under observation where different activities were segregated into community, environment, workplace and diverse titles as suggested by Maqbool and Zameer (2018). 1 and 0 formula has been used to show the existence of absence of items based on the following formula:

$$CSR_i = \sum_1^j \cdot \sum_{i=1}^n dij \quad (1)$$

Finally, the CSR score was transformed into percentage terms with the help of following formula:

$$CSR \text{ score of a company} : \frac{\text{No. of CSR items adopted by the company}}{\text{total number of CSR item}} \quad (2)$$

In addition, green credit is measured by observing the traditional lending activities (Wang et al., 2020). More specifically, the measurement of green credit has been observed with the help of following Equation (3) of the study:

$$\text{Green credit balance ratio} = \text{green credit balance}/\text{total outstanding loans} \quad (3)$$

Finally, the level of Green Investment is measured by the ratio of green investment and total investment (Martin & Moser, 2016).

### 3.3. Methodology

Initially, this study includes descriptive statistics that show the mean, standard deviation, maximum and minimum values of all the constructs. In addition, the current study also includes the correlation matrix that shows the association among the variables. For empirical estimations, panel fixed effect and random effects models are applied following data properties. Fixed effect model assumes that the individual-specific effect is correlated to the independent variable. On the other hand, the random-effects model infers that the individual-specific effects are uncorrelated with the independent variables. Thus, we have applied both and estimate comparable outcomes. For this purpose, the present study has established the following equation by using the understudy constructs.

$$SG_{it} = \alpha_0 + \beta_1 EI_{it} + \beta_2 CSR_{it} + \beta_3 GC_{it} + \beta_4 GI_{it} + e_{it} \quad (4)$$

Where ‘i’ represent the cross-section and ‘t’ is time period. The fixed-effect model (FEM) considered the ‘individuality’ of each cross-section that is the significant characteristic of this model. In addition, it is also assumed that ‘the slope of the coefficient to be constant across the countries even FEM allowed the intercept to vary with each country’. FEM equation is given as under:

$$Y_{it} = \beta_{1i} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + u_{it} \quad (5)$$

In above-mentioned equation subscript (i) exposes the ‘individual company intercepts’ that may vary due to the specific structure of the company. On the other hand, the intercepts may differ each company, ‘but the individual’s intercept would not be changed over time’ are represented by  $\beta_{1i}$  in the model. FEM equation also formulated by adding understudy constructs as follows:

$$SG_{it} = \beta_{1i} + \beta_2 EI_{it} + \beta_3 CSR_{it} + \beta_4 GI_{it} + \beta_5 GC_{it} + u_{it} \quad (6)$$

On the other hand, the random effect model (REM) has well-preserved the ‘intercept inversely’ and assumed that constructs are random and have a mean value of  $\beta_1$  other than  $\beta_{1i}$ . Finally, differences of individuality are imitative in error terms ( $\epsilon_i$ ) (Gujarati, 2003). The estimated regression equations for REM are provided as under:

$$Y_{it} = \beta_1 + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \epsilon_i + u_{it} \quad (7)$$

**Table 1.** Descriptive statistics of Chinese firm.

Variable	Obs.	Mean	Std. Dev.	Min	Max
SG	60	1.659	0.571	0.179	3.437
EI	60	0.18	0.177	0.145	0.756
CSR	60	0.527	0.854	0.18	0.906
GI	60	0.684	0.493	0.38	0.889
GC	60	0.277	0.595	0.111	0.399

Calculated by author dispersion is observed as 1.24 and 1.055, respectively.

Source: Author's Calculation.

$$Y_{it} = \beta_1 + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + w_{it} \quad (8)$$

The above equation shows the  $w_{it} = \varepsilon_i + \mu_{it}$  and  $\varepsilon_i$  highlighted the 'individual error component' while  $\mu_{it}$  indicated the 'time-series error' as well as 'combined cross-section component'. REM equation by adding the understudy variables is given as below:

$$SG_{it} = \beta_1 + \beta_2 EI_{it} + \beta_3 CSR_{it} + \beta_4 GI_{it} + \beta_5 GC_{it} + w_{it} \quad (9)$$

The FEM considered the 'individuality' of each cross-section that is the significant characteristic of this model. On the other hand, the intercepts may differ in each company, 'but the individual's intercept would not be changed over time' and are represented by  $\beta_{1i}$  in the model.

#### 4. Results and discussion

Descriptive findings in any study help to explore the data trends with the help of central tendency and dispersion measures. Table 1 shows and Table 2 show the descriptive statistics for Chinese and Saudi firms, respectively with 60 yearly observations. The mean value for SG is 1.659 which is observed as highest comparatively to the rest of the variables as shown under Table 1. However, the rest of the study variables are showing their mean scores lower than 1, with the similar trends in the standard deviation for all of the variables of interest. This would justify the argument that sales growth is showing the highest and positive trend for the sample firms when observed through mean score. However, the lowest mean trend is presented by economic innovation with the value of 0.18, respectively.

Likewise, the Chinese firms, the trends in total observations for Saudi firms were found to be with 60 total observations during the study period. The descriptive statistics results have shown that SG has 5.07471 mean value and EI has 0.05894 mean trend during 2016–2020. In addition, the average value of CSR is 6.23962 while GI has 5.328771, respectively. These findings indicate that comparatively to Chinese firms, the trends for the sales growth, CSR scores and green investment is higher for the Saudi firms as shown in Table 2 of the study. However, SG is showing standard deviation of 1.13 and for CSR, and GI, the

In addition, the correlation matrix is observed under Table 3 for the Chinese firms. The results have shown the positive association among the economic innovative, CSR, green investment, green credit and sales growth of the companies. However, negative but weak association is observed between RI and CSR, and between EI and GI

**Table 2.** Descriptive statistics of Saudi firm.

Variable	Obs.	Mean	Std. Dev.	Min	Max
SG	60	5.07471	1.137773	0	6.85397
EI	60	0.05894	0.237169	-4.59263	8.779708
CSR	60	6.23962	1.244594	-1.82648	7726.82
GI	60	5.328771	1.055395	0.00068	0.999621
GC	60	0.48501	0.338017	-1.90166	4005.744

Source: Author's Calculation.

**Table 3.** Matrix of correlations of Chinese firms.

Variables	SG	EI	CSR	GI	GC
SG	1.000				
EI	0.283	1.000			
CSR	0.466	-0.032	1.000		
GI	0.534	-0.016	0.830	1.000	
GC	0.035	-0.406	0.427	0.425	1.000

Source: Author's Calculation.

The Saudi firm correlation matrix is given under [Table 4](#). The results show that there is a positive association among the economic innovative, CSR, green investment, green credit and sales growth of the companies. These values are mentioned in [Table 4](#) shown below:

Finally, the study findings for the fixed effect regression estimation have been presented under [Table 5](#). It is observed that economic innovation is showing its significant and positive impact towards the financial performance of Chinese firms as observed through sales growth. This would justify the argument that more innovation related activities in the region of China is good indication for the manufacturing firms while boosting their financial performance. More specifically, one percent change in EI is leading towards 1.126 change in the value of sales growth and vice. The mechanism behind constructive role of innovation towards boosting the performance outlook is that with new products, services or processes manufacturing firms can perform better in the marketplace comparatively to their rivals in the similar industry. In this regard, research findings as provided by Choi and Williams (2014) have provided the similar argument that who investigate the impact of innovation intensity on the sales growth for the Chinese firms too. It is stated that innovation intensity has its positive and significant impact on the performance dynamics like sales growth. Lee et al. (2020) have also examined the association between financial innovation and sales growth for the developing economies while comparing a sample finding for both Asian and non-Asian manufacturing and non-manufacturing, and small and medium-sized versus large-and-medium-sized firms. However, their study has provided contrary findings while claiming that there is a negative impact of financial innovation on the sales growth of those firms which are engaged in financial inclusion. Based on the above discussion and findings under present study, H4 is accepted.

In addition, the findings under [Table 5](#) reports that CSR is significantly and positively linked with the sales growth for the Chinese firms during the study period (i.e.,  $\beta = 0.093$ , standard deviation = 0.033,  $t$ -value = 2.84,  $p$ -value = 0.005). It means that fulfilling the CSR and related obligations is a good sign for the selected listed

**Table 4.** Matrix of correlations of Saudi firms.

	SG	EI	CSR	GI	GC
SG	1				
EI	0.210	1			
CSR	0.211	0.435	1		
GI	0.311	0.287	0.243	1	
GC	0.049	0.202	0.211	0.003	1

Source: Author's Calculation.

**Table 5.** Fixed effect model of Chinese firm.

SG	Beta	S.D.	t-Value	p-Value
EI	1.126	0.213	5.29	0.000***
CSR	0.093	0.033	2.84	0.005***
GI	0.005	0.003	1.71	0.090*
GC	0.625	0.088	7.07	0.000***
Constant	3.480	0.549	6.34	0.000***
R-squared	0.477		Number of obs.: 60	
F-test	35.601		Prob > F 0.000	

\*\*\*  $p < .01$ , \*  $p < .1$ .

Source: Author's Calculation.

firms in order to boost their sales growth and vice versa. This is due to the fact that working for the social responsibilities creates a good impression while directly providing a boost to firms' sales growth as well. In this regard, Nyame-Asiamah and Ghulam (2019) have examined the association between CSR related activities and sales growth for the retail sector of United Kingdom (UK). Their findings have revealed a significant and positive correlation between CSR activities and sales growth. It is also stated that with the commitment for the community investment, retail managers may pursue to increase their sales growth too. Lv et al. (2019) claims that prior work related to CSR has mainly focused on the short-term performance of firms specifically in the developed economies. However, their study has examined the long-term association between CSR and performance dynamics like sales growth and financial volatility as well. It is stated that for the listed public firms in China, CSR as a whole is significantly increasing the long-term growth while reducing the financial volatility of selected firms as well. Waheed and Yang (2019) also consider the factors like CSR and its impact towards organizational performance outlook. For this purpose, data was collected from 450 managers while working in SMES of Pakistan which was further analyzed through structural equation modeling technique. The study findings through SEM approach confirm that there is a significant and positive impact of CSR on the sales performance of and similar is observed for the internal CSR practices too. Based on the above discussion and findings, it is stated that there is a significant and positive impact of CSR on sales growth, hence H3 is accepted.

Furthermore, the findings under Table 5 also reports positive and significant association between green investment and sales growth where the coefficient is 0.005 with the standard deviation of 0.003. This would claim that higher level of green investment is a positive indication towards providing more sales growth and vice versa specifically from the context of Chinese firms. During the recent years, a significant trend has been observed in Chinese economy towards promoting those investment patterns which are green in nature having minimum negative environmental

**Table 6.** Random effect model of Chinese firms.

SG	Beta	S.D.	t-Value	p-Value
EI	0.889	0.201	4.42	0.000***
CSR	0.087	0.031	2.76	0.006***
GI	0.009	0.003	2.97	0.003***
GC	0.353	0.075	4.70	0.000***
Constant	2.282	0.51	4.48	0.000***
Overall r-squared	0.3	Number of obs. 60		
Chi-square	124.501	Prob > chi2 0.000		
R-squared within	0.433	R-squared between 0.225		

\*\*\*  $p < .01$ .

Source: Author's Calculation.

outcomes. Such investment is also known as ecological investment for which a good appreciation has been recorded from different policy makers, and policy makers as well. On the other side, the factor like green credit is also observed with the significant and positive linkage with the sales growth as shown in Table 5 of the study (i.e.,  $\beta = 0.625$ , standard deviation = 0.088,  $t$ -value = 7.07,  $p$ -value = 0.000). In this regard, Xi et al. (2021) have examined the linkage between green credit and financial performance for the selected Chinese banking firms during the period of 2008–2017. It is observed that green credit is a good indication while providing some positive outcomes in the form of financial performance for the banking firms in China. Based on the above findings, both H1 and H2 were also accepted. The findings under Table 6 provide the output for the random effect estimation for the Chinese firms. Like fixed effect output, it is observed that EI, CSR, green investment, and GC are showing their significant and positive impact on the sales growth of Chinese firms. This means that both fixed effect and random effect estimation are showing their similar findings. However, the value of explained variation in the sales growth through FEM is 47.7% which is 43.3% under random effect, respectively.

Table 7 shows the output for the fixed effect model for Saudi firms. The results indicated that economic innovation has a positive impact on sales growth which leads to high market capturing. The study implies that the innovation brought in the economic activities, resources (informational, technological, and human resource), and operational technique raises the level of sales as it gives higher productivity of goods and services with improved quality as well. Furthermore, the higher level of innovative outcomes not only helps to improve productivity and quality, but also reduces per unit cost. These results are also in line with the hypothesis 4 and also consistent with the empirical studies (Adams et al., 2019; Jin et al., 2018; Setini et al., 2021) which shows that as the customers also having their expectations towards new and improved products/services through which business can increase its sales growth. In this regard, the findings conclude that economic innovation helps in attaining higher sales growth.

The study results have represented that corporate social responsibility has a positive impact on sales growth which determines the market capturing through sales (Table 7). The study implies that the effective implementation of corporate social responsibility enables the operation of business operations in the best interest of social welfare and environmental quality, which improves the brand image in the eyes of the general public and gains their satisfaction and confidence. In this way, the sales level of the country increases, and there is an increase in the market capturing.

**Table 7.** Fixed effect model of Saudi firms.

SG	Coefficient	Std.error	t-State	p-Value
C	5.012	2.974	1.68	0.221
EI	2.195	0.660	3.32	0.005***
CSR	1.297	0.267	4.85	0.000***
GI	1.143	0.352	3.247	0.000***
GC	1.547	0.252	6.138	0.000**
R-Squared	0.5346	Number of Obs.	60	
F-test	45.9843	Prob > F	0.0000	

\*\*\* p < .01, \*\* p < .05.

Source: Author's Calculation.

These results are in line with hypothesis 3 and the past studies (Brammer & Pavelin, 2006; Hellsten & Mallin, 2006; Khamis & Wan Ismail, 2021; Statman & Glushkov, 2009; Torugsa et al., 2012), which shows that under corporate social responsibility, the enterprises themselves check that they are on the right from a social and environmental perspective while performing business operations and making deals with the stakeholders. The skilled and active labor force can perform the economic activities more energetically and gives more quality production. The active labor force can also pay more focus on the marketing of products & services. Thus, corporate social responsibility assist enhances sales growth and market capture.

The results indicated that green investment and green credit is in a positive link with sales growth. The mechanism behind this positive linkage indicates that when the organizations have the facility to acquire investment on easy conditions for the purpose to employ eco-friendly resources, production technology, and marketing channels, they can raise the level of sales growth. Thus, the organizations can achieve high market capture. Meeting the requirements of government regulators, the general public, and customers with respect to environmental quality, sales growth can be improved, and thus, the exceptional place can be saved in the market. This study implies that the green investment strengthens the financial position of the firms, and they can spend money on green expenditures like the procurement of eco-friendly technology, energy resources, instruments that can control pollution spreading, and eco-friendly production processes. Similar results are endorsed through Random effects model in Table 8. In comparison, both results indicate that countries have positive impact of economic innovative, corporate social responsibility, green credit, and green investment on sales growth.

## 5. Conclusion and recommendation

In order to achieve higher return over investment, one of the significant focuses for the business organizations is to boost their sales while competing in the market through some innovative products and services. However, due to rapid environmental issues, the significance of green investment and green credit along with the social responsibility of the organizations cannot be ignored. The study examines the influence of economic innovative, corporate social responsibility, green credit, and green investment on sales growth while taking into account the manufacturing firms as working in China and Saudi Arabia. The results implied that corporate social responsibility leads to higher sale growth. More specifically, through effective corporate social responsibility, strong relationships can be developed

**Table 8.** Random effect model of Saudi firms.

SG	Coefficient	Std.Error	t-State	p-Value
C	0.728	0.634	1.14	0.398
EI	7.518	3.358	2.23	0.0132**
CSR	0.043	0.002	15.97	0.0000***
GI	0.739	0.205	3.60	0.0302**
GC	0.012	0.003	3.84	0.04100**
Overall r-squared		0.4563	Number of obs: 60	
Chi-square		150.01	Prob > chi <sup>2</sup> 0.000	
R-squared within		0.3569	R-squared between 0.335	

\*\*\* p < .01, \*\* p < .05.

Source: Author's Calculation.

with the stakeholders which ultimately provide fruitful outcomes in the form of higher sales growth. Moreover, the study results imply that the issuance of green credit enhances the financial performance of the firms as such credit facility helps to promote eco-friendly programs so that the negative impact of the business activities can be removed from the environment, which leads to an increase in the sales growth. Similarly, the findings indicate that green investment programs whose purpose is to promote environmentally friendly business practices and the protection of natural resources also helps to achieve significant growth in the sales. These results suggest that sustainable business practices through innovation, CSR, and green investment are imperative to secure long-term growth. Thus, firms should adopt respective measures to enhance their CSR and R&D to ensure higher productivity with lower environmental cost. China is already transforming towards sustainable firms' growth through several green projects for industries. Similar patterns should be followed by Saudi firms to ensure their sustainable performance. Overall, it is suggested that sales growth can be enhanced by bringing improvement in the economic activities and implementing corporate social responsibility in an efficient manner.

Lastly, this study has certain limitations which can be viewed for settling the future directions too. Firstly, this study has only considered the factors like economic innovative, corporate social responsibility, green credit, and green investment as key determinants towards sales growth for China and Saudi Arabia. This would indicate that still there is a need to add some other macroeconomic and firm-based variables through which some fruitful results would be generated in the upcoming time. Secondly, the current study has taken into account a limit sample of manufacturing firms from both of the economies with the limited number of sample observations too, which can be expanded to other industries. Thirdly, the time duration of this study is also observed with limited context where only five years are under consideration. Fourthly, this study has applied panel regression estimations like fixed effect and random effect, however, it is missing with the implication of some advance panel data methods like GMM, and CS-ARDL, etc. Future studies are highly suggested to address these limitations for more institutive outcomes.

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