mathematics

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The Mediating Effects of Green Innovation and Corporate Social Responsibility on the Link between Transformational Leadership and Performance: An Examination Using SEM Analysis

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Abstract: Since the inauguration of the United Nations Sustainable Development Goals (UNSDGs), environmental performance and sustainability have become more important to decision makers, scientists and leaders of organizations than before. In response to this, leaders of different organizations spend all endeavors conserving resources and ensuring environmental sustainability. In this context, transformational leaders have the capacity to ensure the green performance of their organization. The purpose of this study is to test the link between green transformational leadership (GTL), green innovation (GI), corporate social responsibility (CSR) and green performance (GP) in the hotel industry in the Kingdom of Saudi Arabia (KSA). The study empirically tests the mediating effect of GI and CSR on the link between GTL and GP. The study used a quantitative research method via a pre-test instrument, self-distributed and collected from employees in large hotels at different regions of the KSA. The findings from 732 valid responses, analyzed with structural equation modeling (SEM) showed that GTL had a significant effect on GI (β = +0.72, t-value = 14.603, $p < 0.001$), CSR (β = +0.58, t-value = 8.511, $p < 0.001$) and GP (β = +0.17, t-value = 2.585, $p < 0.001$). Moreover, GI and CSR had a direct positive effect on GP (β = +0.10, t-value = 2.866, $p < 0.01$ and β = +0.61, t-value = 4.358, $p < 0.001$, respectively). GI had a partial mediation effect ($p = 0.048 < 0.05$) on the link between GTL and GP. On the other hand, CSR had a perfect mediation effect ($p = 0.077 > 0.05$) on the link between GTL and GP. This reflects the vital part that CSR plays in this relationship, which can be changed based on the status of CSR. In addition, this reflects the value of CSR in achieving GP, which contributes to the achievement of environmental sustainability at a national level (i.e., the Green Saudi Initiative) at a regional level (i.e., the Green Middle East Initiative) and at an international level (i.e., UNSDGs).

Keywords: green performance (GP); green transformational leadership (GTL); green innovation (GI); corporate social responsibility (CSR); Green Saudi Initiative; Saudi hotel industry; SEM

MSC: 91Cxx

Citation: Sobaih, A.E.E.; Gharbi, H.; Hasanein, A.M.; Abu Elnasr, A.E. The Mediating Effects of Green Innovation and Corporate Social Responsibility on the Link between Transformational Leadership and Performance: An Examination Using SEM Analysis. *Mathematics* **2022**, *10*, 2685. https://doi.org/10.3390/math10152685

Academic Editor: Junseok Kim

Received: 2 July 2022
Accepted: 26 July 2022
Published: 29 July 2022

1. Introduction

Environmental sustainability has drawn the attention of decision makers, scientists and leaders of different organizations worldwide, especially after the inauguration of the

United Nations Sustainable Development Goals (UNSDGs). Therefore, leaders of organizations have paid more attention to the green performance (GP) of their businesses in the last couple of decades than ever before [1]. Furthermore, environmental challenges that face organizations nowadays, in addition to national and international environmental regulations, have pushed organizations to adopt different practices to maintain environmental sustainability [2]. The role of leadership in ensuring the GP of their organizations, to sustain the environment and contribute to the achievement of UNSDGs, cannot be underestimated [3–6].

Transformational leadership theory is identified as one of the most important theories for explaining green initiatives because transformational leaders are highly effective in proper safeguarding of the GP of their employees and organization overall [7,8]. According to Robertson and Barling [9], green transformational leadership (GTL) has been defined as transformational management, in which the essence of the leadership focuses mainly on stimulating green attitudes and the behavior of employees. Additionally, a number of recent studies, e.g., [6,7,10], have found that GTL inspires employees' green behavior, encourages green innovation (GI) of products, services and processes, and ensures corporate social responsibility (CSR), which in turn improves the GP of organizations. GTL incorporates green initiatives with human resources management (HRM) practices [11]. GTL was assumed to have a greater importance in fostering a culture of sustainability in organizations [12]. Numerous research studies (e.g., [6,7,10,12–14]) have found an influential relationship between GTL, GI, CSR and GP. However, there are very limited studies on the interrelatedness of these variables in the hospitality industry, especially in hotels [6].

Recently (on 27 March 2021) the Crown Prince of the Kingdom of Saudi Arabia (KSA), Mohamed Bin Salman, inaugurated the Green Middle East Initiative and the Green Saudi Initiative, which intend to champion the climate actions inside and outside of the Kingdom (https://www.saudigreeninitiative.org/, accessed on 1 June 2022). The initiatives have clear targets and performance indicators, which contribute to the achievement of the Saudi Vision 2030 as well as the UNSDGs. The initiatives would like to promote the role of the KSA as a worldwide leader in environmental sustainability. The impact of initiatives will be reflected worldwide through the reduction of desertification, and through boosting biodiversity and achieving a more sustainable future. Thanks to the leadership of the KSA, the KSA is more committed to the international agenda of environmental sustainability and meeting climate change. The Crown Prince confirmed that the initiatives need collaboration from all stakeholders inside and outside of the KSA (https://www.saudigreeninitiative.org/, accessed on 1 June 2022). Organizations in the KSA, including hotels, are currently paying more attention to their environmental impact than before.

The aim of this research is to investigate the mediating effects of GI and CSR on the link between GTL and GP in hotels. Particularly, this study has three key objectives. First, the study investigates the direct effect of GTL on GP in hotels in the KSA. Second, the study tests the direct effect of both GI and CSR on the GP of hotels. Third, it examines the indirect effect of GTL on the GP of a hotel via GI and CSR. This research draws upon transformational leadership theory [15,16] and the theory of the resource-based view theory (RBV) [17] to investigate the above-mentioned relationships. These two theories explain how GTL, as a strategic resource with proper green human resource management practices, can help attract, develop, retain and sustain employees' behavior and performance to achieve GI and CSR, as well as engaging in superior GP. The study is among first the attempts to examine the indirect effect of GTL on GP though two different mediators, i.e., GI and CSR. Previous studies [1–10] either examine the value of green HRM in general or its influence on green behavior and environmental performance. Previous studies have also examined one of the mediators, either GI or CSR, on the link between GTL and GP [6,10,13]. However, there is no published research, to the best of the study team's knowledge, that has examined the direct effect of GTL on GP, and indirectly through GI and CSR, especially in the context of developing countries such as the KSA. This study

fills a gap in knowledge concerning the interrelationship between GTL, GI, CSR and GP in hotels. Additionally, the study establishes managerial implications for hotels' executive management, particularly those operating in the KSA, on how to maintain GP through GTL, GI and CSR. Thus, because of the above discussion, there are five research questions, as follows:

Research question 1: What are the effects of GTL on GI, CSR and GP in the hotel industry in the KSA?
Research question 2: What is the effect of GI on GP in the hotel industry in the KSA?
Research question 3: What is the effect of CSR on GP in the hotel industry in the KSA?
Research question 4: How does GI Intermediate the link between GTL and GP in the hotel industry in the KSA?
Research question 5: How does CSR Intermediate the link between GTL and GP in the hotel industry in the KSA?

This research has the following structure to achieve the above-mentioned purpose: Section 2 shows the theoretical framework and builds the research hypotheses. Section 3 presents the quantitative method used for data collection and analysis. Section 4 explains the statistical results of the research using the structural equation modeling (SEM) analysis. Section 5 discusses the findings of the research, compares it with previous studies and presents the implications for academics and hotel leaders. Section 6 concludes the study and explains the limitations and future research directions.

2. Theoretical Background

Leadership has been identified as one of the most crucial elements in achieving appropriate business performance [6,10,16]. In line with this argument, transformational leadership has received considerable interest among all leadership theories and approaches, since it has a direct influence on employees' performance and overall organizational performance [9]. According to Chen and Chang [18], GTL is an indicator of a leader who inspires and drives his/her employees to achieve green and sustainable goals that appear to go above and beyond what is expected from them. According to Farrukh et al. [19], GTL has four aspects: green idealized influence, green inspiring motivation, intellectual stimulation and customized concern. These four aspects encourage green behavior and promote GI, which impact ultimately on GP [20].

Green innovation is the creation of green-friendly products [13,21,22] through the implementation of organizational practices such as greener raw materials and the use of fewer materials during product design, using eco-design principles. In addition, the main objective is to reduce emissions, and the usage of water, electricity and other natural resources [23]. It is well-documented that organizations with GI are highly successful [13,24] and have improved performance, compared to their competitors, because they influence their green resources, and capabilities to adapt appropriately and quickly to customers' requirements [25–27], as well as adding important aspects and assets to the organization.

Recently, the CSR has received great attention from both scholars and practitioners [28–33] because it describes the sophisticated relationship between green impacts and economics, as well as community engagement in business enterprises [34–36]. According to Jnaneswar and Ranjit [33], CSR involves the initiatives that are prioritized over the organization's economic gains, and it has an influence on all stakeholders. Similarly, Schinzel [37] indicated that CSR reflects organizational achievements in building social well-being, developing green friendly business and driving economic progress, which clarifies the main objectives of CSR such as identifying sustainable development and fulfilling stakeholders' expectations. These illustrations reflect the complex nature of CSR.

Green performance is considered as one of the most vital elements in conserving the environment from negative consequences (such as pollution and waste), while sustaining organizational performance [6,10,12]. Studies conducted have also revealed that GP is de-

pendent on employees' abilities, competencies and motivation, which provide the foundation of the green management system [38,39]. GP is significantly related to different green effects (this includes, for instance, the green behavior of employees and green innovation) from green initiatives to eliminate the negative impacts [10,12].

It is also crucial to note that the novel coronavirus (COVID-19) pandemic has radically influenced the international economy; albeit, it has raised the value of sustainable performance as a worldwide recent concern. The global economy has been heavily hit by COVID-19, especially the hotel industry, which has been among the hardest affected industries [40–42]. Due to the apparent lockdowns and obligatory quarantines imposed in most countries, the world economy has been wrecked and the hotel industry has been immobilized, with revenues falling by at least 50% amid the pandemic [43]. As a result, both hotel management and scholars started paying higher attention to green human resources management practices as one of the solutions to enhance the green behavior of employees, and environmental as well as sustainable performance [13,22,44]. The fascial pressure from the COVID-19 pandemic could be a trigger for sustainable performance [45]. A recent study [44] showed that hotel green and sustainable practices may not have an immediate impact on financial performance in the forthcoming years, but they can improve social and environmental performance, which can contribute to improved financial performance in the long term. This study contributes to the achievement of environmental and sustainable performance through GTL, GI and CSR.

2.1. Green Transformational Leadership and Green Innovation

There are numerous cross-sectional studies [46–49] that suggest that transformational leadership plays a vital role in the innovation capacities of organizations. GTL has been the most widely used leadership theory in pursuit of sustainability goals, both at country and organization level [50]. It can also build innovative knowledge and ideas, which enhances the chance of GI [51,52]. Furthermore, Zhou et al. [53] stated that a high-level GTL contributes to the creation of green products. From this perspective, GTL has the ability to empower businesses to generate innovative and creative concepts. The GTL's strategic resources can serve as an important vehicle for motivating employees to acquire new information, which contributes to the development of GI in markets. Drawing on both theories, RBV and transformational leadership, a recent study by Singh et al. [10] showed that transformational leaders are significant drivers of GI through incorporating current market knowledge and trends, providing financial power, integrating the latest green technologies and mentoring employees to complete innovative techniques [54]. Based on these arguments, it could be proposed that:

Hypothesis 1 (H1). *GTL has a significant positive effect on GI in the hotel industry.*

2.2. Green Transformational Leadership and Corporate Social Responsibility

There is a growing body of literature on sustainable development, which has recognized CSR as one of the most critical elements in green business organizations over the last few decades [28–33]. This is because it explains the complex relationship between green influences, and financial and community involvement in business organizations. Several studies [55–57] showed that one of the aspects of CSR concentrates on leadership related to the organizational practices towards the surrounding community. Consequently, GTL has a crucial role in the implementation of CSR on the GP in any business, including hotels. A recent study of Kusi et al. [55] emphasized that GTL provides employees with a clear goal, motivation and inspiration through a green approach, and an appreciation for employees who are interested in their social responsibilities. Using sustainable green techniques to establish and maintain responsibility in an organization is a role and obligation for long-term success [10,29,58–60]. Hence, the following hypothesis could be proposed:

Hypothesis 2 (H2). *GTL has a significant positive effect on CSR in the hotel industry.*

2.3. Green Transformational Leadership and Green Performance

Numerous studies have been carried out to investigate the impact of GTL on GP (see, for example, [50,58,61,62]). According to Mittal and Dhar [58], GTL inspires the workforce to accomplish an organization's long-term environmental goals by providing them with a clear vision, aspiration, inspiration and passion, as well as the support needed. As a result, GTL is regarded as a predictor of GP [6,18,19,55,63]. The study of Cop et al. [50] showed that GTL had a significant influence on green engagement in the job, as well as GP. Hence, the following hypothesis could be proposed:

Hypothesis 3 (H3). *GTL has a significant positive effect on employees' GP in the hotel industry.*

2.4. Green Innovation and Green Performance

Various studies, e.g., [10,13,21,64–67], have assessed the efficacy of GI to improve GP. Robinson and Stubberud [66] explored whether the influence of GI on GP is consistent across small, medium and large enterprises, which confirmed that large organizations seek to protect and preserve the environment by fostering the GI process. Another study by Singh et al. [10] found that an enterprises' GP is influenced by its GI process. Furthermore, the study of Kraus et al. [67] showed that GI is considered an effective source of GP via both green human resource management and green intellectual capital, and can promote a better environment. Moreover, the work of Sobaih et al. (2021) revealed that green innovation positively and significantly influences the environmental performance of hotels. Based on these arguments, it could be hypothesized that:

Hypothesis 4 (H4). *GI has a significant positive effect on GP in the hotel industry.*

2.5. Corporate Social Responsibility and Green Performance

The ethical business perspective plays a significant role in CSR, attempting to drive the GP of the organization. The traditional CSR approach refers to the social and green dimensions, guiding the enterprises to achieve their long-term GP [62]. Several studies support a predominant approach to CSR on GP [31,68–71] by proving the positive influence of CSR on organizational performance [72]. This underlying relationship revealed that socially responsible firms provide economic benefits to organizations, thereby reinforcing the relationship between CSR and GP [73]. Consequently, the literature indicated that CSR is an efficient technique for successfully transitioning businesses to achieve higher performance [74]. Based on these arguments, it could be proposed that:

Hypothesis 5 (H5). *CSR has significant positive effect on GP in the hotel industry.*

2.6. The Mediating Effect of Green Innovation on the Link between Green Transformational Leadership and Green Performance

GTL contributes to increasing employee environmental awareness, fostering green creativity and encouraging green organizational presentation [4]. According to previous research, e.g., [4,12,62], GTL is considered one of the crucial elements to inspire GI and GP, but these research areas necessitate a comprehensive and practical approach to evaluating firms' perspectives, while taking into consideration their main stakeholders' engagement in sustainable management practices [75]. Hence, organizations should recruit employees who have environmental beliefs and values and use appraisal, green training, development and green compensation as crucial elements to encourage employees to influence GP [12,13,76]. GI significantly reduces the organization's negative impact and increases its GP through cost savings, waste reduction and other resources [26]. Using RBV

theory [17] and transformational leadership theory [15,16], it is predicted that GTL indirectly stimulates GP of the organization through the mediating role of GI. Hence, it could be hypothesized that:

Hypothesis 6 (H6). *GI has a mediating effect on the link between GTL and GP in the hotel industry*.

2.7. The Mediating Effect of CSR on the Link between Green Transformational Leadership and Green Performance

Green performance activation is directed by the organization's sustainable development strategy, which is based on CSR, goals and standards, and thus serves as a link between GTL and employees' green behavior in carrying out GP. As a consequence, CSR is depicted in this context as a linkage between GTL and employees' green behavior [77]. Thus, if the CSR values provide knowledge and identification of responsibility, GTL and GP can have a positive relationship [31]. Furthermore, the study of Masa'deh et al. [69] revealed that there is a positive and significant correlation between CSR and GP. The study of Manzoor et al. [70] found that there is a direct positive influence of transformational leadership, described as "the neo-charismatic paradigm", on employee performance. A recent study of Tosun et al. [6] found that there was an indirect effect of GTL on GP mediated by CSR in hospitality SMEs in Cyprus. Based on these arguments, it could be proposed that:

Hypothesis 7 (H7). *CSR has a mediating effect the link between GTL and GP in the hotel industry*.

The research theoretical model, which summarizes all research hypotheses is shown in Figure 1.

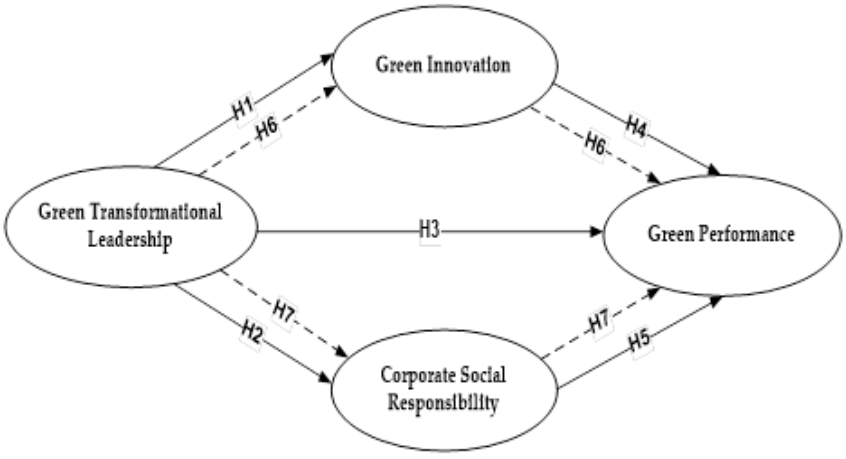

Figure 1. The theoretical model (⟶ refers to direct effect; ---▶ refers to indirect effect). (Developed by the authors based upon the above literature review).

3. Methods

3.1. Data Collection Methods

This study adopted a quantitative research method for data collection and analysis. The study adopted a pre-tested instrument for collecting primary data from the research participants. Data in this study were collected from large hotels in different regions of the KSA, mainly from the big cities, i.e., Riyadh, Jeddah, Damam, Dhahran, Jubail and Yanbu. The questionnaire was self-distributed and collected by the research team to ensure the purpose of the research was clear for participants and to ensure a high response rate. This is despite the high cost of data collection in the KSA due to the long distance between

these main cities. A company specializing in data collection helped the research team in this stage. Data were collected in the first quarter of 2022, i.e., February and March 2022. There was distribution of 1000 questionnaire forms. Of which, 732 forms were collected with valid responses for data analysis. The response rate was 73%, which is quite acceptable [78]. In addition, the sample size of this research is inconsistent with the size proposed by Krejcie and Morgan [78]. Furthermore, the sample is also aligned with the suggestion made by Roussel [79]. Roussel suggested that the number of participants has to be up to 10 times the number of items in the questionnaire form, i.e., up to 250 responses. This study had sufficient participation, at more than the suggested number. This sample size is also consistent with similar recent studies in the same context [10,13]. The research items of the questionnaire and their sources are presented in Appendix A. Data were collected during the first quarter of the current year 2022. Items were adopted to test the interrelationships between the constructs of the study. Respondents were asked to give their consent before participation through a written consent form. The question was piloted with 15 employees to check its clarity. There were no major changes; only a minor revision to the wording was undertaken.

3.2. Analyzing the Collected Data

Responses from participants were checked for completeness and then analyzed using SPSS and AMOS software, version 25. The structural equation modeling (SEM) approach was conducted for data analysis. Respondents were asked to give their responses on a Likert scale of five points, ranging from 1 to 5, where 1 = completely disagree and 5 = completely agree. Responses were checked to ensure that they were not around the mean value, as proposed by Bryman and Cramer [80]. The mean of the collected data for all variables varied between 4.12 and 4.37, and standard division ranged between 0.718 and 0.849 (see Table 1). The skewness coefficient was adopted to assess "whether the observations were distributed equitably around the mean (the coefficient was then zero) or whether they were rather concentrated towards the lowest values (positive coefficient) or whether they were rather concentrated towards the highest values (negative coefficient)" [81]. The Kurtosis coefficient compares "the distribution curve of the observations to that of the normal distribution: a positive coefficient indicates a higher concentration of observations, while a negative coefficient indicates a flatter curve" [81]. In this study, the Skewness and Kurtosis coefficients did not violate the normality assumption (see Table 1).

This study adopted the Chi^2 probability to determine the Jarque–Bera test, by mixing the Skewness and Kurtosis coefficients to diagnose the normality of the distribution. If prob > Chi^2 was greater than 0.05, the probability was not significant, and therefore the H0 hypothesis was rejected. In this study, the GTL, GI, CSR and GP variables, and the prob > Chi^2 display are 0.772, 0.658, 0.823 and 0.842, respectively, and all were greater than 0.05. Therefore, the probabilities were not significant [81]. Hence, the null hypothesis was rejected. Additionally, the Skewness and Kurtosis coefficients were not similar to that of the normal law. Furthermore, all VIFs, "variance inflation factors", were close to 1 (see Appendix B). Hence, there was no potential problem of collinearity to explore. If the VIF is closer to 1, then the model is much more robust, as the factors are not influenced by correlation with other factors.

For ensuring proper presentation of the data principal component analysis (PCA), varimax rotation was conducted. The total variance extracted (TVE) for the GTL, CSR, GI and GP factor was ensured (see Appendix C), at 64.15%, 58.39%, 56.13% and 59.95%, respectively. The KMO^2 index showed values above 0.79, and the Bartlett tests were significant (Appendix C). This shows that items were valid for confirmatory factorial analysis (CFA).

Table 1. Descriptive statistics (developed by the authors using SPSS and AMOS software based on the previous literature).

Abbr	Item	Min	Max	M	SD	Skewness	Kurtosis
Green Transformational Leadership							
GTL1	The leader inspires the project members with the environmental plans	1	5	4.23	0.822	−0.964	0.930
GTL2	The leader provides a clear environmental vision for the project members to follow	2	5	4.23	0.763	−0.524	−0.747
GTL3	The leader gets the project members to work together for the same environmental goals;	2	5	4.32	0.790	−0.933	0.138
GTL4	The leader encourages the project members to achieve the environmental goals	2	5	4.15	0.849	−0.764	−0.078
GTL5	The leader acts with considering environmental beliefs of the project members	3	5	4.37	0.717	−0.683	−0.777
GTL6	The leader stimulates the project members to think about green ideas	2	5	4.16	0.852	−0.776	−0.085
Green Innovation							
GI7	Our organization uses materials that produce the least pollution	1	5	4.24	0.824	−0.977	0.925
GI8	Our organization uses materials that consume less energy and resources	2	5	4.23	0.763	−0.524	−0.747
GI9	Our organization uses materials that produce an environment-friendly product	2	5	4.32	0.790	−0.933	0.138
GI10	Our organization uses materials that are easy to recycle, reuse, and decompose	2	5	4.15	0.849	−0.764	−0.078
Corporate Social Responsability							
RSE11	Our organization has flexible policies that enable employees to better balance their work and personal life.	3	5	4.38	0.718	−0.706	−0.760
RSE12	Our organization provides an excellent working environment for workers.	2	5	4.22	0.780	−0.514	−0.860
RSE13	Our organization fulfils the terms of work agreements assigned in mutual contracts.	1	5	4.24	0.824	−0.977	0.925
RSE14	Our organization seeks to fulfil the law that regulates its activities.	2	5	4.23	0.763	−0.524	−0.747
CSR15	Our organization provides accurate information to its business partners.	2	5	4.32	0.790	−0.933	0.138
CSR16	Our organization sponsors activities with the partnership of local institutions and schools.	2	5	4.15	0.849	−0.764	−0.078
CSR17	Our organization gives importance to the activities relevant to nature and environmental protection.	3	5	4.30	0.754	−0.560	−10.035
CSR18	Our organization gives importance to activities, which are particularly important for the public well-being of society.	2	5	4.12	0.854	−0.695	−0.221
Green Performance							
GP19	Green management within our enterprise has reduced waste	2	5	4.19	0.788	−0.453	−0.955
GP20	Green management within our enterprise has conserved water usage	1	5	4.22	0.828	−0.937	0.802
GP21	Green management within our enterprise has conserved energy usage	2	5	4.22	0.767	−0.495	−0.799
GP22	Green management has reduced purchases of non-renewable materials, chemicals and components.	1	5	4.21	0.832	−0.899	0.689
GP23	Green management has reduced overall costs	2	5	4.22	0.767	−0.495	−0.799
GP24	Green management has reduced wastes and improved its position in the marketplace	1	5	4.23	0.822	−0.964	0.930
GP25	Green management has helped enhance the reputation of our enterprise	2	5	4.23	0.763	−0.524	−0.747

4. Findings

4.1. The Results of CFA

CFA was conducted to ensure that the items adopted in the research fit with the research model. The results of CFA showed that model has a satisfactory goodness of fit (GoF), as suggested by Pedhazur Schmelkin [82], Bentler and Bonett [83] and Hair et al. [81]. This GoF metrics was conducted to examine the fit of the theoretical model (Figure 1) to the data collected in this study (see Table 2). These GoF metrics include "normed chi-

square", "root mean square error approximation" (RMSEA), the comparative fit index" (CFI), and the "Tucker–Lewis index" (TLI). Hence, the model shows that normed $\chi 2$ = 2.494, RMSEA 0.087, CFI = 0.977 and TLI = 0.973 (for full details of these metrics, please see the footer of Table 2). The reliability of the items was assured though Cronbach's alpha (a) and composite reliability (CR). The Cronbach's alpha and CR values of the four main factors are: GTL (a = 0.880, CR = 0.960), CSR (a = 0.966, CR = 0.971), GI (a = 0.915, CR = 0.987) and GP (a = 0.980, CR = 0.963). These results confirm that the data have acceptable internally consistency, since the values are above 0.7, as recommended by Nunnally [84].

The analysis of the data showed that the measures have appropriate convergent validity, which was confirmed through two aspects. Firstly, the standardized factor loading for all factors was significant and exceeded 0.7 [81]. Secondly, the average variance extracted (AVE) value should be above 0.5 for all four factors [85]. In this study, the AVE was above 0.8 for all factors, confirming an acceptable convergent validity, i.e., GTL (0.829), GI (0.950), CSR (0.808) and GP (0.787) (see Table 2). Discriminant validity for the four factors was also acceptable in this study, which was confirmed though two steps. Firstly, the maximum shared variance (MSV) of the four factors had to be less than the AVE values (see Table 2). Secondly, the square roots of the AVEs (in bold in Table 2) had to be higher than the off-diagonal values. Therefore, discriminant validity in this study was confirmed [81].

Table 2. Convergent and discriminant validity (developed by the authors using SPSS and AMOS software).

Factors and Items	SFL	CR	AVE	MSV	ASV	1	2	3	4
1. Green Transformational Leadership (α = 0.88)		0.960	0.829	0.470	0.289	**0.910**			
The leader of the green innovation project inspires the project members with the environmental plans	0.820								
The leader of the green innovation project provides a clear environmental vision for the project members to follow	0.811								
The leader of the green innovation project gets the project members to work together for the same environmental goals;	0.917								
The leader of the green innovation project encourages the project members to achieve the environmental goals	0.948								
The leader of the green innovation project acts considering the environmental beliefs of the project members	0.977								
The leader of the green innovation project inspires the project members with the environmental plans	0.981								
2. Green Innovation (α = 0.915)		0.987	0.950	0.436	0.528	0.266 **	**0.974**		
Our organization uses materials that produce the least pollution	0.980								
Our organization uses materials that consume less energy and resources	0.977								
Our organization uses materials that produce environment-friendly product	0.982								
Our organization uses materials that are easy to recycle, reuse, and decompose	0.960								
3. Corporate Social Responsibility (α = 0.966)		0.971	0.808	0.405	0.409	0.571 **	0.861 **	**0.900**	
Our organization has flexible policies that enable employees to better balance work and personal life.	0.818								

Our organization provides an excellent working environment for workers.	0.824								
Our organization fulfils the terms of work agreements assigned in mutual contracts.	0.871								
Our organization seeks to fulfil the law that regulates its activities.	0.891								
Our organization provides accurate information to its business partners.	0.907								
Our organization sponsors activities with the partnership of local institutions and schools.	0.918								
Our organization gives importance to the activities relevant to nature and environmental protection.	0.994								
Our organization gives importance to activities, which are particularly important for the public well-being of society.	0.955								
4. Green Performance (α = 0.980)		0.963	0.787	0.559	0.328	0.426 **	0.833 **	0.817 **	**0.890**
Green management within our enterprise has reduced waste	0.832								
Green management within our enterprise has conserved water usage	0.868								
Green management within our enterprise has conserved energy usage	0.810								
Green management has reduced purchases of non-renewable materials, chemicals and components.	0.927								
Green management has reduced overall costs	0.939								
Green management has reduced waste and improved its position in the marketplace	0.909								
Green management has helped enhance the reputation of our enterprise	0.917								

Model fit: (χ2 (25, N = 732) = 62,355 $p < 0.001$, normed χ2 = 2.494, RMSEA = 0.087, SRMR = 0.0247, CFI = 0.977, TLI = 0.973, NFI = 0.960, PCFI = 0.699 and PNFI = 0.694); ** $p < 0.01$; "SFL: standardized factor leading; CR: composite reliability; AVE: average variance extracted; MSV: maximum shared value; diagonal values: the square root of AVE for each dimension".

4.2. Findings of SEM

This research adopted a two-step confirmation strategy. Firstly, the research developed a theoretical model (Figure 1), which was drawn from the related literature review. Secondly, the research adopted a pre-tested instrument to collect data and examine the theoretical model. Furthermore, the validity and reliability of the construct were confirmed. The results then were analyzed with SEM to test the influence of GTL on GP, directly and indirectly, via CSR and GI. The results of SEM confirmed that the research final structural model fits the data well, "χ2 (11, N = 732) = 30,166 $p < 0.001$, normed χ2 = 2742, RMSEA = 0.031, SRMR = 0.0139, GFI = 0.985, CFI = 0.994, TLI = 0.995, NFI = 0.998, PCFI = 0.773 and PNFI = 0.812", confirming GoF (see Figure 2 and Table 3).

The structural model (Figure 2) confirmed all the research hypotheses discussed in the literature. There were five hypotheses examining direct relationships. First, the findings confirmed a significant, direct, positive influence of GTL on GI (β = 0.72, t-value = 14.603, $p < 0.001$), supporting H1; CSR (β = 0.58, t-value = 8.511, $p < 0.001$) supporting H2, and GP (β = 0.17, t-value = 2.585, $p < 0.05$) supporting H3. Furthermore, the findings confirmed a significant, direct, positive influence of GI and CSR on GP (β = 0.10, t-value = 2.866, $p < 0.05$), (β = 0.61, t-value = 4.358, $p < 0.001$), supporting H4 and H5, respectively

(See Table 3). Additionally, the robustness of the research final model (Figure 2) is legitimized by another value of R^2 for GI ($R^2 = 0.501$) and CSR ($R^2 = 0.738$) (Table 3). Adopting GTL and GI could justify 50% of the variance of GP.

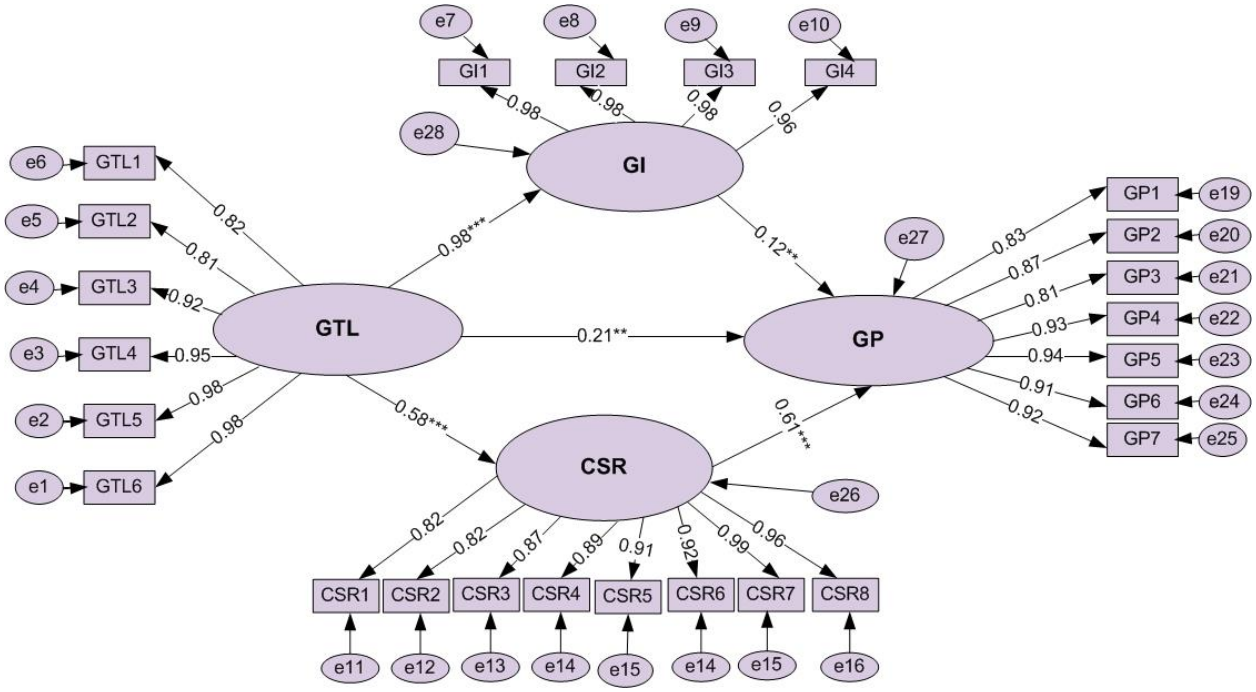

Figure 2. The final research structural model (developed by the authors using SPSS and AMOS software). *** $p < 0.001$; ** $p < 0.01$.

Table 3. Result of the structural model (developed by the authors using SPSS and AMOS software).

Result of the Structural Model	β	C-R (*t*-Value)	R^2	Results
H1-GTL→GI	0.72 ***	14.603		Supported
H2-GTL→CSR	0.58 ***	8.511		Supported
H3-GTL→GP	0.17 **	2.585		Supported
H4-GI→GP	0.10 **	2.866		Supported
H5-CSR→GP	0.61 ***	4.358		Supported
GP Through CSR			0.738	
GP Through GI			0.501	

Model fit: ($\chi 2$ (11, N = 732) = 30,166 $p < 0.001$, normed $\chi 2 = 2.742$, RMSEA = 0.031, SRMR = 0.0139, GFI = 0.985, CFI = 0.994, TLI = 0.995, NFI = 0.998, PCFI = 0.773 and PNFI = 0.812), *** $p < 0.001$; ** $p < 0.01$.

This research adopted the methodology proposed by Kelloway [86], and Baron and Kenny [87] to test the mediating effect of GI and CSR on the link between GTL and GP. This methodology has different steps. Firstly, the association between GTL and GP had to be significant in order to have a possibility of mediation. The findings confirmed a significant influence of GTL on GP ($\beta = 0.17$, *t*-value = 2.585, $p < 0.05$). Secondly, the associations between the independent factor (GTL) and mediating factors (GI and CSR) had to be confirmed. The findings confirmed a significant, direct, positive influence of GTL on GI ($\beta = 0.72$, *t*-value = 14.603, $p < 0.001$) and on CSR ($\beta = 0.58$, *t*-value = 8.511, $p < 0.001$). Thirdly, the association between the mediating factors (GI and CSR) and dependent (GP) had to be ensured as well. The evidence shows that GI and CSR significantly and positively influence GP, ($\beta = 0.10$, *t*-value = 2.866, $p < 0.05$), ($\beta = 0.61$, *t*-value = 4.358, $p < 0.001$), respectively. Fourthly, the study needed to confirm the type of mediation, whether partial or full

mediation, of GI and CSR on the relationship between the GTL and the GP (see Tables 4 and 5).

Adopting bootstrapping methodology, through the AMOS analysis, which is "the user-defined estimand". As Table 4 shows, GTL still has a significant effect on GP after adding the mediation of GI (β = +0.105, p = 0.048 < 0.05). Hence, it could be argued that this is a partial mediation effect. Furthermore, the results of the Sobel test showed a Z-value = 3.77 > 1.96 and p-value of zero, confirming partial mediation again. On the other hand, Table 5 shows GTL still has no significant effect on GP after adding the mediation of CSR (β = +0.215, p = 0.072 > 0.05). Hence, it could be argued that this is a perfect or full mediation effect.

Table 4. The mediation effect of GI (developed by the authors using SPSS and AMOS software).

Parameter	Estimate	Lower	Upper	p	Mediation
H6-GTL→GI→GP	0.105	0.043	0.385	0.048	0.048 < 0.05 Partial Mediation

Table 5. The mediation effect of CSR (developed by the authors using SPSS and AMOS software).

Parameter	Estimate	Lower	Upper	p	Mediation
H7-GTL→CSR→GP	0.215	0.110	0.392	0.072	0.072 > 0.05 Perfect Mediation

5. Discussion and Implications

This study provides a new attempt toward greening the hotel industry. The study draws on theories on transformational leadership and RBV to investigate the mediating effect of GI and CSR on the link between GTL and GP in the hotel industry in the KSA. In this context, little attempts have been conducted to examine both the direct and indirect relationship through a theoretical model, which was further examined and confirmed in this research. Therefore, the current research adds to the green hotel management literature by incorporating theories of GTL and RBV to test the interlink between GTL, GI, CSR and GP. The study developed an initial conceptual framework supplemented with study hypotheses and research questions, drawing upon the previous literature in the context of the hotel industry. Based on the data collected and analyzed from hotel employees in different departments, numerous significant results emerged from this research. As anticipated, the results of the SEM analysis showed that all research hypotheses are supported. For more clarification, the findings showed that GTL has a significant, positive, direct effect on both GI (H1) and CRS in hotels (H2). Additionally, GI has a significant, positive, direct effect on GP (H3), and CRS has a significant positive effect on GP (H4). Furthermore, GTL has a significant, positive, direct effect on GP (H5).

These findings are inconsistent with previous studies [10,50,54,55,74]. For instance, Singh et al. [10] found a positive influence of GTL on GI, because GTL provides hotel employees with proper inspiration and often incorporates the latest green technologies in their practices. Similarly, Kusi et al. [55] declared that GTL has a crucial role in providing their subordinates with motivation, inspiration and gratitude for employees who are interested in their social responsibilities. Furthermore, these results reinforce the assertions of previous studies [10,13,64,65] regarding the hypotheses that the GP is positively influenced by its efficient technique, whether GI or CSR. Interestingly, the result also advances previous studies in relation to the impact of GTL on GP, e.g., [6,19,50,55]. Summing up, study results and earlier findings confirmed that GTL is the key issue to achieve GP via CSR and GI.

One of the main objectives and questions in this research was to examine the mediating effect of GI and CRS on the link between GTL and GP in the hotel industry. Interestingly, the findings showed a partial mediating effect of GI on the link between GTFL and

GP, whereas the results indicated that CSR has a perfect mediation impact. Thus, CRS has the possibility to control the relationship between GTL and GP. This finding partially supports the previous results (e.g., [6]), which showed that there is an indirect effect of GTL on GP mediated through CSR in hospitality SMEs in Cyprus; because the CSR values provide knowledge and identification of responsibility, GTL and GP can have a positive relationship.

The current study could be considered a new attempt to investigate the vital role of both GI and CSR in driving the GP of the hotel industry. The results of this paper make important contributions to the literature and to scholars, particularly in relation to the leadership theory, since it confirms that GTL not only has a direct positive influence on GP, but it also confirmed an indirect impact through GI and CSR. Moreover, the study confirmed a full mediating effect of CSR on the above-mentioned relationship. Nonetheless, there was a partial mediating effect of GI on the link between GTFL and GP. These findings highlight the central role of CSR in affecting the link between GTL and GP. It is hoped that it will also motivate scholars to undertake further research on the antecedents of CSR and their effects on other issues of environmental sustainability.

This study also contributes significantly to greening the hotel industry and its contribution to the national and international agenda of green performance. The research contributes to hotel managerial practices by revealing that GTL has an effective pathway to achieve the GP of their hotel directly and indirectly. Furthermore, GTL can enhance GI as well as CSR. Consequently, the GP of the hotel can be enhanced if hotel managers ensure these antecedences of GP. Furthermore, the outcomes of the study have practical implications for executive management and hotel leaders as they need to recognize their significant effect on their subordinates' innovation, CSR and GP. Leaders have to make every effort to ensure that green values are disseminated among their employees. Leaders' motivation, inspiration and gratitude for their employees will encourage them to become green innovators, interested in more CSR practices. In addition to selecting green transformational managers or leaders, recruiting and selecting hotel employees who value CSR is essential to enhancing the GP of their hotels. Hotel leaders and/or managers need to pay special attention to CSR, since it has a prefect mediation on the link between GTL and GP. Thus, it should be prioritized to ensure the occurrence of GP in the hotel industry as well as contributing to the national and international green agenda.

6. Conclusions, Limitations and Further Research Opportunities

Sustainability and environmental concern have drawn the attention of decision makers, academics and leaders of organizations, whether at a national or international level. Like many other industries, leaders in the hotel industry have realized the value of GTL as an effective pathway to achieve the GP of their employees and, overall, the organization. This study has drawn on RBV and GTL theories to test the role of GTL in GP through GI and CSR. The study outcomes showed that GTL positively influences GI and CSR and ultimately GP. Furthermore, a partial mediating effect of GI on the link between GTL and GP was confirmed; CSR has a perfect mediation effect in this link. This confirms that CSR can control the link between GTL and GP. This also means that the existence of CSR ensures the occurrence of GP.

The current research encountered some limitations; nevertheless, the limitations can serve as avenues for upcoming research opportunities. First, this study collected data from hotels located in a specific country, the KSA. Therefore, caution is needed when generalizing the results to the context of other countries. In particular, this study did not examine the role of cultural differences; hence, future studies could examine the research model across different cultural contexts, which would decide whether the findings of this study are culture-specific. Furthermore, the outcomes of the current research were conducted on the category of large hotels; hence, the results cannot simply be generalized to other categories or other industries, since small hotels have different characteristics [88]. Second, the current research did not test the demographic impact of leaders, for instance gender,

experience and age, on the link between GTL and GP. Thus, in the future, studying the effect of these variables could be another interesting research opportunity. Third, the study objective was to investigate the mediating effect of GI and CSR on the link between GTL and GP. Hence, it may be interesting for future research to test different style of leadership or to integrate other factors as determinants of GP in the workplace, for instance, employee self-efficacy, pro-environmental behavior and task related behavior.

Author Contributions: Conceptualization, A.E.E.S., A.M.H., H.G. and A.E.A.E.; methodology, A.E.E.S., A.M.H., H.G. and A.E.A.E.; software A.E.E.S. and H.G.; validation, A.E.E.S., A.M.H. and A.E.A.E.; formal analysis, A.E.E.S. and H.G.; investigation, A.E.E.S., A.M.H., H.G. and A.E.A.E.; resources, A.E.E.S. and H.G.; data curation, A.E.E.S., A.M.H., H.G. and A.E.A.E.; writing—original draft preparation, A.E.E.S., A.M.H., H.G. and A.E.A.E.; writing—review and editing, A.E.E.S. and A.E.A.E.; visualization, A.E.E.S. and A.E.A.E.; supervision, A.E.E.S., A.M.H., H.G. and A.E.A.E.; project administration, A.E.E.S.; funding acquisition, A.E.E.S., A.M.H., H.G. and A.E.A.E. All authors have read and agreed to the published version of the manuscript.

Funding: This work was supported by the Deanship of Scientific Research, Vice Presidency for Graduate Studies and Scientific Research, King Faisal University, Saudi Arabia [GRANT840].

Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Deanship of Scientific Research Ethical Committee, King Faisal University (project number: GRANT840, date of approval: 2 February 2022).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Data is available upon request from researchers who meet the eligibility criteria. Kindly contact the first author privately through the e-mail provided.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A. The Measurement Scales

Abbr	Scales and Items	Authors
Green Transformational Leadership		
GTL1	The leader inspires the project members with the environmental plans	Chen and Chang, [18]
GTL2	The leader provides a clear environmental vision for the project members to follow	
GTL3	The leader gets the project members to work together for the same environmental goals;	
GTL4	The leader encourages the project members to achieve the environmental goals	
GTL5	The leader acts considering the environmental beliefs of the project members	
GTL6	The leader stimulates the project members to think about green ideas	
Green Innovation		
GI7	Our organization uses materials that produce the least pollution	Chen et al. [89]
GI8	Our organization uses materials that consume less energy and resources	
GI9	Our organization uses materials that design environment-friendly product	
GI10	Our organization uses materials that are easy to recycle, reuse, and decompose	
Corporate Social Responsability		
CSR11	Our organization has flexible policies that enable employees to better balance work and personal life.	Manzoor et al. [64]
CSR12	Our organization provides an excellent working environment for workers.	
CSR13	Our organization fulfils the terms of work agreements assigned in mutual contracts.	
CSR14	Our organization seeks to fulfil the law that regulates its activities.	
CSR15	Our organization provides accurate information to its business partners.	
CSR16	Our organization sponsors activities with the partnership of local institutions and schools.	
CSR17	Our organization gives importance to the activities relevant to nature and environmental protection.	

CSR18	Our organization gives importance to activities, which are particularly important for the public well-being of society.	
Green Performance		
GP19	Green management within our enterprise has reduced waste	Kim et al. [12]
GP20	Green management within our enterprise has conserved water usage	
GP21	Green management within our enterprise has conserved energy usage	
GP22	Green management has reduced purchases of non-renewable materials, chemicals and components.	
GP23	Green management has reduced overall costs	
GP24	Green management has reduced waste and improved its position in the marketplace	
GP25	Green management has helped enhance the reputation of our enterprise	

Appendix B. Variance Inflation Factor (VIF) Test

Indepdent Variables	**VIF**
Green Transformational Leadership = GTL	1.109
Green Innovation = GI	1.018
Corporate Social Responsibility = CSR	1.043

Appendix C. KMO, Total Variance Explained and Cronbach's Alpha

Measured Variable	**KMO**	**TVE**	α
Green Transformational Leadership = GTL	0.734	64.15	0.880
Green Innovation = GI	0.777	56.13	0.915
Corporate Social Responsibility = CSR	0.871	58.39	0.966
Green Performance = GP	0.866	59.95	0.980

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