

The Impact of Digital Transformation on Business Performance in the Social Security Institution: The Mediating Role of Green Innovation

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Abstract

Over the last decades, digital transformation has dramatically grown affecting approximately every discipline and business in the planet. With the increasing observation of climate change and global warming issues worldwide, concepts of sustainability and green businesses have recently emerged. Nonetheless, the available literature does lack such concepts, particularly the critical impacts of digital transformation mediated by green innovation. Accordingly, this paper is performed to classify main beneficial impacts and relevant practicalities of digital transformation on the business performance at social security institution mediated by green innovation. To accomplish the research objective, a cross-sectional descriptive quantitative approach was implemented. Survey questionnaires were prepared and distributed to the study sample that was identified by a random sampling strategy. Relying on the statistical data analysis, which was carried out by the SmartPLS4® software, it was found that the arithmetic mean score for digital transformation was 3.596, with a standard deviation of 0.605, having a medium rank of importance. Green innovation had a mean of 3.763 and a standard deviation of 0.671, reflecting a high rank of importance. Business performance had a mean of 3.632 and a standard deviation of 0.560 with a medium importance rank. Additionally, it was discovered that a strong positive influence of digital transformation does exist on the business performance at the social security institution. The digital transformation can significantly influence business performance of the SSI. Digital transformation had a significant positive impact on the green innovation. Green innovation can significantly mediate the impact of the digital transformation on the business performance at the social security institution.

Keywords: Digital transformation (DT) • business performance (BP) • social security institution (SSI) • green innovation (GI).

INTRODUCTION

The global landscape has undergone significant transformations over the past three to four decades, with widespread acknowledgment of the profound impact and rapid pace of digital transformation on both individuals and businesses (Bala, 2018). However, prior to addressing the process of digital transformation, it is imperative to establish clear distinctions between the concepts of digitization, digitalization, and digital transformation. According to Fiodorov & Muganda Ochara (2019), the transition to digital business involves several distinct phases. These phases include the digitization of analog information, digital information processing, and the final phase of digital-enabled enterprise transformation. The significance of value to the end-consumers is of paramount importance. Moreover, it is widely acknowledged that digital transformation represents a substantial shift in the fundamental framework through which organizations generate value (Gudergan & Mugge, 2017). Mazzone (2014) provides a definition of digital transformation (DT) as the intentional and continuous digital evolution of a company, business model, idea process, or methodology, encompassing both strategic and tactical activities. In contemporary times, organizations are confronted with unavoidable transformations that necessitate a reevaluation of their operational strategies, stakeholder engagement, and responsiveness to evolving customer behaviors and demands. This imperative arises from the persistent pressure exerted by competitors (Bala, 2018).

Consequently, the digital economy has emerged as a novel catalyst for industrial optimization and revolutionization. Prior research has shown that the use of digital technologies can enhance the effectiveness of firms' access to and utilization of resources, decrease transaction and principal-agent expenses, and establish diverse resource advantages for firms. Therefore, the process of digital transformation has the potential to decrease cost stickiness (Chen & Xu, 2023) and yield favorable effects on firm innovation (Zhang et al., 2022) and performance (Tang & Yang, 2022). Nevertheless, the implementation of digital technology necessitates a

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substantial financial commitment and a thorough restructuring of current business operations, product systems, and management frameworks (Li & Jia, 2018).

In this paper, the corresponding sequence will follow the one expressed in the following points:

Section 2 indicates the Literature Review,

Section 3 displays the Materials and Methods,

Section 4 shows the major Results of the article,

Section 5 expresses the major Conclusions of this study.

Section 6 illustrates the main Recommendations as Future Work Directions,

Section 7 displays Critical Research Limitations,

References are listed at the final pages of this work.

LITERATURE REVIEW

Digital Transformation

Digital transformation is "the organization's transition from dealing with physical resources only to focusing on information resources based on the Internet and business networks, where it tends more than ever to abstract and hide things and what is related to them to the extent that informational-cognitive-intellectual capital has become the most effective factor in achieving its goals and in using its resources." Digital transformation has been linked to intensive use of information and communication technology and increased productivity and competitiveness to respond to global market and environmental changes. Using information and communication technology to enhance and support administrative work, whether for management processes, transactions, or operations, makes it more urgent for institutions to raise awareness of digital culture among all members of the business institution. This shows that achieving digital transformation in the right and gradual manner improves work speed, unifies and simplifies processes, and protects information by preserving, storing, retrieving, and making it available to everyone instead of storing documents and data in paper archives that take up space and take time to search. In addition to improving work quality and development, digital transformation of institutions may change social interaction patterns. The institution's technology success is also linked to its interest in service-related factors like: "developing technology and paying attention to human resources, which are the basis for improving service levels by training individuals and providing them with various skills within the framework of optimal investment in automation and information technology, in addition to work procedures, which are the third effective.

Digital transformation requires a shift from a traditional, complex structure to a clear, comprehensive information technology-based structure that improves performance and saves time, effort, and money. The institution's laws, administrative practices, and social interactions must also be changed. It also requires a shift in human resources from knowledge keepers and regulators to innovators in information technology and developers in digital culture, as well as changing the nature of institutional interactions by diversifying the use of modern communication devices and channels, expanding the scope of interaction opportunities, and benefiting from n This also requires management to deal with unwanted interactions between individuals and invest and direct them for the institution's benefit to increase productivity and preserve its identity and entity.

Business Performance

Manzoor (2012) identified a number of strategic components that have the potential to contribute to the enhancement of the performance of organizations, including the following: In order to define the standards of achievement, performance, and results, it is necessary to first determine what the

organization is and what its mission is. Along with this, it is also necessary to investigate the various options for resources, define clear goals that are derived from the organization's mission, and establish priorities. The extent to which beneficiaries are satisfied with the services that are provided is one example of the performance measures that need to be specified. These metrics are required to be utilized in order to provide feedback on the efforts that have been made within the organization. Last but not least, there should be a consistent review of performance and results in order to modify unsatisfactory performance and activities that are not productive, as well as to adjust goals if they are deemed necessary. A new mechanism that contributes to improved performance can be developed with the help of this.

Green Innovation

Green innovation is usually divided into two types, where the first describes green innovation as a company's capabilities, while the second defines green innovation as an organization's environmental practices. When it comes to organizational practices, green innovation is described as "innovative hardware or software related to green products or processes" (Aishoush & Tabakhi, 2020). It is suggested that green innovation includes management practices and green technological innovation developments that expand environmental and organizational performance and provide a competitive advantage for companies. On the other hand, a recent study expresses green innovation as "new or modified products and processes, including technological, managerial, and organizational innovations, that help preserve the surrounding environment" (Khazal & Diab, 2019). Furthermore, green innovation may refer to "an innovative initiative that reduces negative environmental impacts or achieves environmental benefits because it creates value in the market." Green innovation is divided into two types, such as "green product innovations" (providing new green products to consumers) and "green process inventions" or "green" work procedures. Moreover, given the increasing customer-centric concerns regarding environmental protection, environmental management of innovation has become an important part of green innovation policies and tactical plans of many companies (Zawawi, 2022).

The impact of green innovation on economic performance is unclear. Although investment must be increased, environmental regulations can have a compensatory effect on economic performance by reducing energy consumption and production costs for enterprises, which directly improves profitability, alleviates financing constraints, reduces financial risks, and improves value, market competitiveness, and investment returns. Green innovation can indirectly improve economic performance by improving corporate image, attracting investment and subsidies to ease financing constraints, reducing pollution to improve reputation and market share, managing environmental risks, fulfilling social responsibilities, and complementing organizational learning capabilities to enhance competitive advantages. High demand for capital for green innovation drives regional financial development, and its additional opportunities have increased employment rates (Musa & Sayed Taha, 2023).

MATERIALS AND METHODS

The Research Approach

In this article, a secondary data collection strategy was initiated and implemented by shedding light on critical DT roles and practical benefits in fostering the performance of business, with a special focus on the business connected with SSIs. Also, major rationale and relevant impacts of GI are highlighted in promoting the value and significance of business in conjunction with DT. After this research phase, a cross-sectional descriptive quantitative approach was adopted through which survey questionnaires were prepared and distributed to the study sample.

Corresponding reliability and content validity regarding the effectiveness and appropriateness of survey questionnaire dimensions and articles to measure and evaluate the study sample's points of view are checked and verified referring to academic consultants and statistical research experts.

Then, the primary data collection approach was conducted relying on the preparation and distribution of the survey questionnaire forms to the study sample. Following this stage, relevant data analysis was carried out with the support of SmartPLS4® Software Package. This software has provided comprehensive data analysis and extraction of various beneficial correlations between research dependent and independent variables according to a collection of statistical indices and factors that can best tell the effective roles and contributions of DT in elaborating on the performance of business of SSIs under the umbrella of GI.

These indices cover (A) Cronbach’s alpha, (B) normal distribution (The one-sample Kolmogorov–Smirnov (K-S) test), (C) hypotheses testing, (D) demographic data analysis, (E) skewness test, (F) significance, standard deviation (SD) (σ), arithmetic mean, and ranking, (G) Analysis of Variance (ANOVA), (H) T- coefficient, F-value, and standard error, (I) goodness of fit (GFI), (J) adjusted goodness of fit (AGFI), (K) root mean square error of approximation (RAMSEA), (L) comparative fit index (CFI), and (M) normed fit index (NFI).

Figure 1 indicates a summary related to the major research phases adopted in this article to collect the primary and secondary data

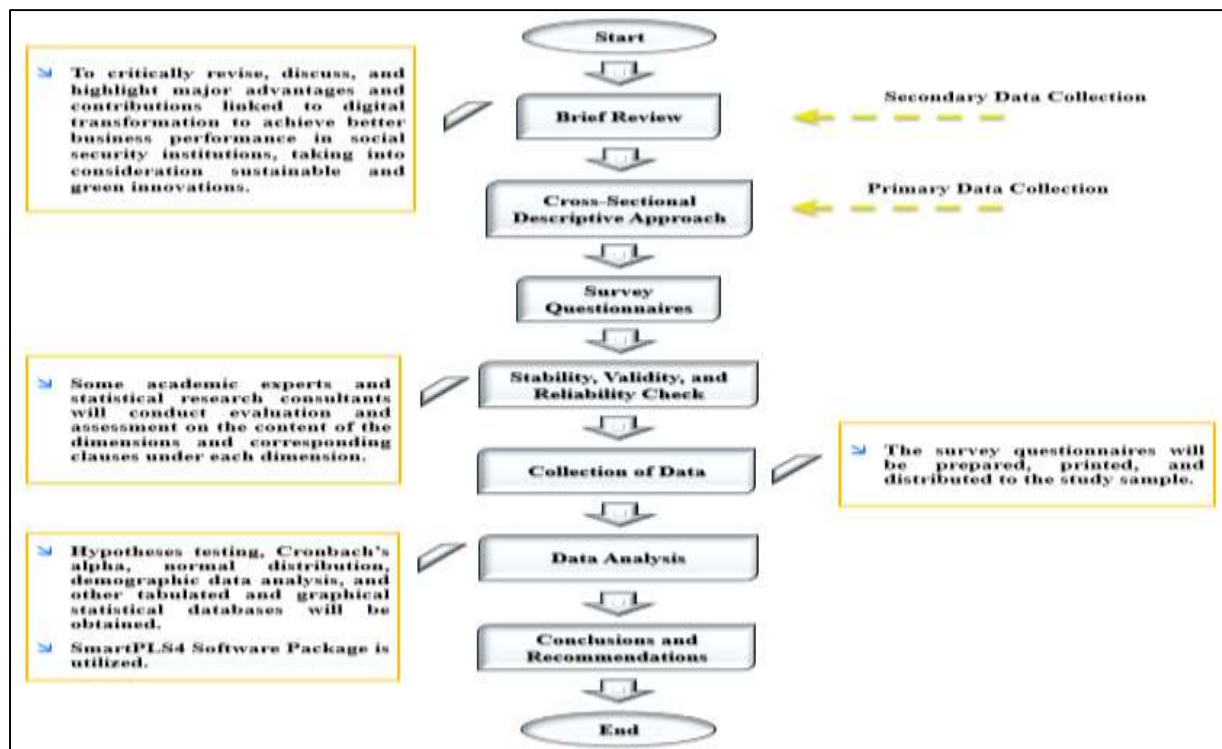


Figure 1. The major research approach implemented in this article (Author, 2024).

Dependent and Independent Research Variables

In this publication, there are a number of study variables and independent variables that will be investigated through the data collection and analysis. Dependent research variables are those indices whose rates and quantities can be controlled and adjusted by the change in the amount of independent variables. However, there is another category of variable called the mediating variable, which can explain how the independent variable can affect the other. Figure 2 illustrates the correlation between the research’s independent, mediating, and dependent variables examined in this study.

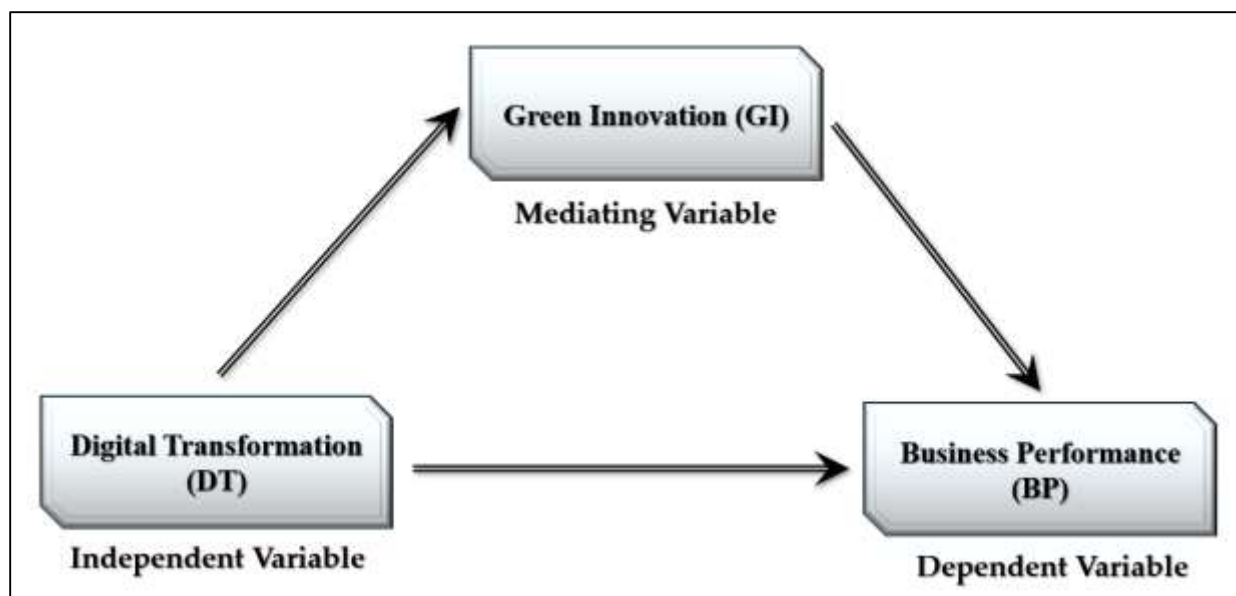


Figure 2. The major correlation between independent, mediating, and dependent variables (Author, 2024).

Data Collection: The Survey Questionnaire

The core research variables explored in this work, which include DT (as an independent variable), BP (as a dependent variable), and GI (as the mediating variable) will be considered in the survey questionnaire, whose general structure will be divided into four major sections, which are:

Personal Questions: To collect necessary demographic data like gender, age, job level, and years of service to contextualize responses,

DT: To measure the impact of digital technologies on institutional processes, operational efficiency, adaptability, and service delivery.

GI: To assess the institution's commitment to environmentally friendly practices and their impact on efficiency, cost reduction, service quality, and stakeholder satisfaction.

BP: To evaluate the overall effect of digital transformation and green innovation on service quality, operational efficiency, beneficiary satisfaction, and organizational flexibility.

The Study Sample

The study's sample expresses a heterogeneous employee population, encompassing diverse backgrounds across various departments within the SSI. This diversity can allow the sample to capture a broad range of perspectives on the impact of DT and GI initiatives at various organizational levels. The population contains employees within the institution, chosen for their direct insights into the adoption of these initiatives and their impacts on the BP.

A stratified random sampling strategy (RSS) is utilized to ensure representation from various departments and job roles. The sample size, identified using statistical tools to confirm significant levels of reliability and validity, is 390 individuals. All of those participants are suitable for analysis. The calculation of the sample size is based on statistical methods from Kish (1965) and Israel (1992), resulting in a final sample size of 383 for the study.

The study utilized a five-point Likert scale to measure the extent of agreement or disagreement, with responses ranging from "strongly agree" to "strongly disagree." The scale assigns a score of 1 for "strongly disagree" and 5 for "strongly agree," with intermediate options in between.

The Likert scale processing follows Subedi's (2016) method, where the category length is calculated as 1.3 using the equation $(5-1)/3(5-1)/3(5-1)/3$. Based on this, the arithmetic averages are categorized as follows: Low

level: Average between 1 and 2.33, medium level: Average between 2.34 and 3.67, High level: Average between 3.68 and 5.00.z

Research Validity and Reliability

To ensure the validity of the data collection instrument for this study, several steps were taken. Initially, reviewed pertinent studies and research to design the first draft of the questionnaire. This draft was then presented to the study supervisor, an expert in the scientific method, for validation and suitability. Subsequently, the questionnaire underwent scientific arbitration by a panel of specialists and experts in management and scientific research methods, who provided feedback and recommendations for necessary revisions. After implementing these changes, the questionnaire was finalized in its final form. The reliability of the study instrument used to assess the variables in the questionnaire was evaluated by calculating the Cronbach's Alpha coefficient. According to Sekaran and Bougie (2016), a result is considered statistically acceptable if the value exceeds 0.60, with higher values indicating greater reliability, approaching 1. The analysis revealed that the overall Cronbach's Alpha was 86.4%, reflecting a high level of reliability. The results of the reliability test for all variables are shown in Table 1.

Table 1. Major stability coefficients linked to the study tool.

Domain	Number of Items	Cronbac's Alpha Rate
DT	6	0.856
GI	7	0.874
BP	6	0.823
Overall	19	0.812

It can be inferred from Table 1 that the Cronbach's alpha ranges between 81.2% to 87.4% for all dimensions, which is acceptable because it is above 70%.

RESULTS

From the statistical analysis conducted by the SmartPLS4® Software Package, the research did obtain a collection of critical outcomes that are statistically analyzed. The following sections do illustrate these statistical results.

Demographic Outcomes of the Study Sample

it was found that the gender distribution in the sample showed a higher representation of females, with 63.19% (242 respondents) compared to 36.81% males (141 respondents). In terms of age, the largest group consisted of participants between 25-34 years old, making up 43.34% (166 respondents), followed by those under 25 years at 31.85% (122 respondents). Also, individuals aged 35-44 represent 20.10% (77 respondents), while only a small percentage, 4.70% (18 respondents), are 45 years or older.

Regarding job level, over half of the respondents are executives (51.70%, 198 respondents), while specialists, such as those in IT, account for 18.28% (70 respondents). Administrative roles make up 16.97% (65 respondents), and employees involved in green innovation initiatives constitute 13.05% (50 respondents), reflecting the study's focus on this particular area.

In terms of experience, a significant majority of the respondents, 73.63% (282 participants), have more than 6 years of experience. Those with 4-6 years of experience represent 16.19% (62 respondents), while 8.09% (31 respondents) have 1-3 years of experience. Only a small portion, 2.09% (8 respondents), has less than 1 year of experience, as explained in Table 2. This indicates that the sample is composed largely of experienced individuals.

Table 2. Critical demographic results collected from the study sample.

Category	Frequency	Percentage (%)
Gender		
Male	141	36.81
Female	242	63.19
Age		
Under 25 Years	122	31.85
25-34 Years	166	43.34
35-44 Years	77	20.10
45 Years or above	18	4.70
Job Position		
Administrative	65	16.97
Specialist (e.g., IT)	70	18.28
Executive	198	51.70
Employees Involved in GI Initiatives	50	13.05
Experience Years		
Less than 1 Year	8	2.09
1-3 Years	31	8.09
4-6 Years	62	16.19
More than 6 Years	282	73.63

Findings of the Normal Distribution Test

A normal distribution test was conducted on the collected data to determine if it followed a normal distribution. The one-sample Kolmogorov–Smirnov (K-S) test was applied, as the number of questionnaires exceeded 50. According to Hair et al. (2011), the data is considered normally distributed if the significance (Sig) value is greater than 0.05, the K-S value is below 5, and the skewness values are less than 1.

The results of this normal distribution test are presented in Table 3. All variables exhibit characteristics consistent with normal distribution. For the digital variable, the mean is 3.596, with slight negative skewness (-0.389) and near-normal kurtosis (0.199). The Kolmogorov–Smirnov test yields a K-S value of 1.353 and a significance of 0.097, indicating normality. The green variable has a mean of 3.763, with moderate negative skewness (-0.511) and slightly flatter kurtosis (-0.153). Its K-S value is 1.209, and the significance is 0.361, also confirming normal distribution. The business variable, with a mean of 3.632, shows near-symmetric skewness (-0.163) and normal kurtosis (0.405). The K-S value of 1.391 and significance of 0.062 further suggest normal distribution. Overall, all variables conform to the normal distribution criteria based on the Kolmogorov–Smirnov test results.

Table 3. Results on the normal distribution test of the collected data.

Category	Skewness		Kurtosis		Kolmogorov-Smirnov Test	
	Statistic	Standard Error	Statistic	Standard Error	K-S	Significance
Digital Transformation	-0.389	0.125	0.199	0.249	1.353	0.097
Green Innovation	-0.511	0.125	-0.153	0.249	1.209	0.361
Business Performance	-0.163	0.125	0.405	0.249	1.391	0.062

The Resulting Arithmetic Mean, Standard Deviation, and Significance Ranking of the Study Variables

Table 4 provides the mean, standard deviation, and importance ranking for the study variables. The mean score for digital transformation is 3.596, with a standard deviation of 0.605, indicating a medium level of importance. Green innovation has a mean of 3.763 and a standard deviation of 0.671, reflecting a high level of importance. Business performance has a mean of 3.632 and a standard deviation of 0.560, also categorized as medium in importance.

Table 1. The arithmetic mean, standard deviation, and significance ranking of the study variables.

Category	Mean	Std. Deviation	Importance
Digital Transformation	3.596	0.605	Medium
Green Innovation	3.763	0.671	High
Business Performance	3.632	0.560	Medium

Hypotheses Testing Results

Test Results of the First Hypothesis

This section of the study focuses on evaluating the **first hypothesis** to assess the influence of the independent variable on the dependent variable. The results for testing this hypothesis are detailed in Table 5.

The First Hypothesis, H₁: “There is a positive impact of digital transformation on business performance in the Social Security Institution.”

Table 5 presents the results of testing the impact of digital transformation on business performance at the Social Security Institution. The model summary shows a correlation coefficient (R) of 0.621 and a coefficient of determination (R²) of 0.386, indicating that approximately 38.6% of the variance in business performance can be explained by digital transformation. The ANOVA results reveal an F-value of 239.234 with a significance level (Sig F) of 0.000, suggesting that the model is statistically significant. The coefficients section shows that the digital transformation variable has a coefficient (B) of 0.575 with a standard error of 0.037. This coefficient is statistically significant with a T-value of 15.467 and a significance level (Sig T) of 0.000, indicating a strong positive influence of digital transformation on business performance. Overall, the results support the hypothesis that digital transformation significantly impacts business performance at the Social Security Institution.

Table 2. Results of testing the impact of DT on the BP in the SSI.

This section concentrates on analyzing the test results of the second hypothesis, which states that:

The Second Hypothesis, H₂: “There is a positive impact of green innovation on business performance in the Social Security Institution.”

Table 6 provides the results of assessing the impact of digital transformation on business performance at the SSI. The model summary indicates a correlation coefficient (R) of 0.621 and a coefficient of determination (R²)

of 0.386. This means that digital transformation explains approximately 38.6% of the variance in business performance. The ANOVA results show an F-value of 239.234 with a significance level (Sig F) of 0.000, indicating that the model is statistically significant. In the coefficients section, the digital transformation variable has a coefficient (B) of 0.575 with a standard error of 0.037. This coefficient is highly significant, with a t-value of 15.467 and a significance level (Sig T) of 0.000. This suggests that digital transformation has a substantial positive effect on business performance. Overall, the results confirm that digital transformation significantly influences business performance at the SSI.

Table 3. Results of testing the impact of GI on BP in the SSI.

D.V	Model Summary		ANOVA		I.V	Coefficients			
	R	R ²	F	Sig F*		B	Standard Error	T	Sig T*
BP	0.572	0.327	185.140	0.000	GI	0.477	0.035	13.607	0.000

Test Results of the Third Hypothesis

This section illustrates the test outcomes corresponding to the third hypothesis, which states that:

The Third Hypothesis, H₃: “There is a positive impact of digital transformation on green innovation in the Social Security Institution.”

Table 7 presents the results of evaluating the impact of digital transformation on green innovation at the Social Security Institution. The model summary shows a correlation coefficient (R) of 0.500 and a coefficient of determination (R²) of 0.250, indicating that digital transformation accounts for 25% of the variance in green innovation. The ANOVA results reveal an F-value of 127.021 with a significance level (Sig F) of 0.000, demonstrating that the model is statistically significant. In the coefficients section, the digital transformation variable has a coefficient (B) of 0.554 with a standard error of 0.049. This coefficient is statistically significant, with a t-value of 11.270 and a significance level (Sig T) of 0.000. This suggests that digital transformation has a significant positive impact on green innovation. Overall, the findings indicate that digital transformation significantly influences green innovation at the Social Security Institution.

Table 4. Results of testing the impact of DT on GI in the SSI.

D.V	Model Summary		ANOVA		I.V	Coefficients			
	R	R ²	F	Sig F*		B	standard error	T	Sig T*
GI	0.500	0.250	127.021	0.000	DT	0.554	0.049	11.270	0.000

Test Results of the Fourth Hypothesis

This part of the study is concerned with testing the first hypothesis of the study to determine the influence relationship. Between the independent variable and the dependent variable, the results of testing the fourth hypothesis were reviewed.

Table 8 provides an assessment of the model fit for verifying both direct and indirect impacts. The Adjusted Goodness of Fit Index (AGFI) is 0.84, which is above the recommended value of greater than 0.8, indicating that the model fits the data well. The Chi-Square to Degrees of Freedom ratio (X²/df) is 3.85, which is below

the recommended maximum of 5, suggesting an acceptable model fit. The Goodness of Fit Index (GFI) is 0.911, exceeding the threshold of 0.90, which further supports a good overall model fit. The Root Mean Square Error of Approximation (RMSEA) is 0.04, well below the recommended value of 0.10, indicating minimal error and a strong fit. The Comparative Fit Index (CFI) stands at 0.927, which is higher than the recommended 0.9, reflecting a robust fit compared to a null model. Lastly, the Normed Fit Index (NFI) is 0.9, meeting the recommended value of greater than 0.9, signifying a good fit relative to a baseline model. Overall, these indices collectively suggest that the model exhibits a strong fit to the data.

Table 5. Track analysis results to verify the direct and indirect impact

V.	AGFI	χ^2 /DOF	GFI	RAMSEA	CFI	NFI
Value Recommended	> 0.8	< 5	> 0.90	≤ 0.10	> 0.9	> 0.9
Reference(s)	(Miles & Shevlin, 1998)	(Tabachnick & Fidell, 2007)	(Miles and Shevlin, 1998).	(MacCallum <i>et al.</i> , 1996)	(Hu and Bentler, 1999).	(Hu and Bentler, 1999).
Value of Model	0.84	3.85	0.911	0.04	0.927	0.9

Table 9 shows the results of analyzing the role of green innovation as a mediating variable in the impact of digital transformation on business performance at the Social Security Institution. The direct effects reveal that digital transformation has a strong and significant positive effect on green innovation, with an estimate of 0.537 and a critical ratio (C.R.) of 9.517 ($p < 0.001$). Additionally, green innovation significantly influences business performance, with an estimate of 0.39 and a C.R. of 7.584 ($p < 0.001$). Digital transformation also directly affects business performance, with an estimate of 0.417 and a C.R. of 7.971 ($p < 0.001$). The indirect effect of digital transformation on business performance through green innovation is 0.21, indicating that green innovation partially mediates this relationship. Overall, the results demonstrate that green innovation significantly mediates the effect of digital transformation on business performance.

Table 6. Results of testing the impact of GI as a mediating variable in the impact of DT on BP in the SSI.

Category	Path	Estimate	S.E.	C.R.	P
Direct Effect	Green <--- Digital	0.537	0.056	9.517	***
	Business <--- Green	0.390	0.051	7.584	***
	Business <--- Digital	0.417	0.052	7.971	***
Indirect Effect	Business<--- Green <---Digital	0.210		---	
*** Sig. ($\alpha \leq 0.01$)					

Figure 3 shows the structural equation modeling (SEM).

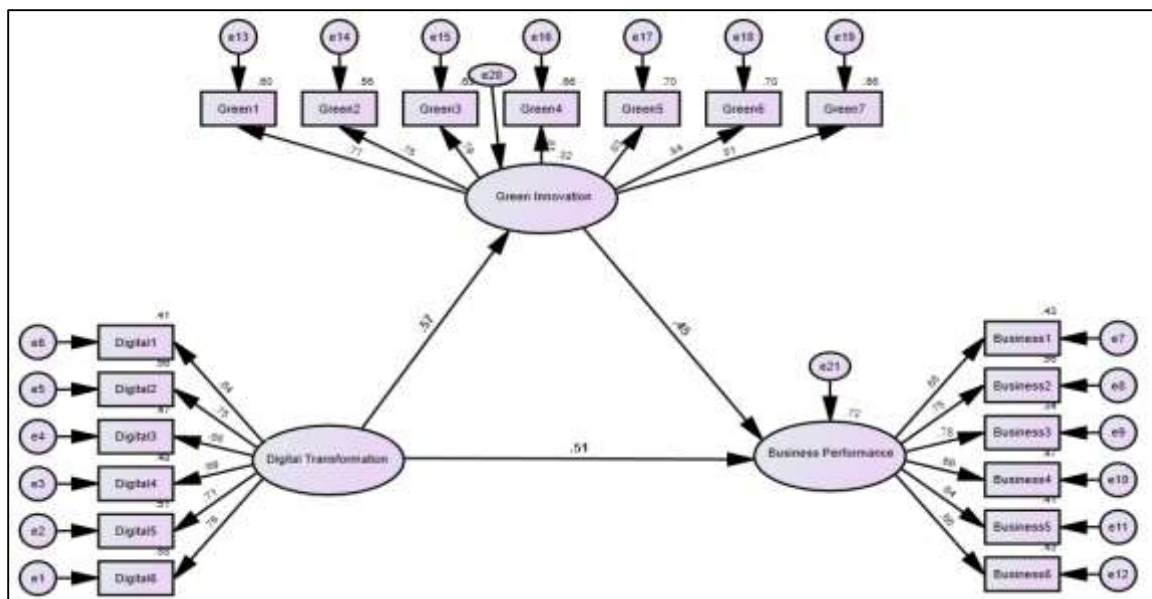


Figure 1. The structural equation modeling (SEM).

CONCLUSION

This paper was carried out, seeking to classify and categorize major beneficial influences and practical contributions of DT on the BP of SSI mediated by the GI. To achieve the study goal, a primary data collection strategy was implemented through which cross-sectional descriptive quantitative approach was exploited. Survey questionnaires have been prepared and distributed to the study sample that was identified by a RSS. Building on the statistical analysis conducted by the SmartPLS4® Software Package, the major research outcomes can be listed in the following points:

The mean score for DT was 3.596, with an SD of 0.605, having a a medium rank of importance. GI had a mean of 3.763 and an SD of 0.671, reflecting a high rank of importance. BP had a mean of 3.632 and an SD of 0.560 with a medium importance rank,

A strong positive influence of DT was noted on the BP at the SSI,

The DT can significantly influence BP of the SSI,

DT had a significant positive impact on the GI,

GI can significantly mediate the impact of the DT on the BP at the SSI.

RECOMMENDATIONS AS FUTURE WORK DIRECTIONS

Relying on the statistical outcomes obtained from the SmartPLS4® Software Package, the current paper suggests a few future work directions that could be implemented by scholars in the same interest to help foster and improve the entire outputs attained from the cross-sectional quantitative study through survey questionnaires, which cover the following:

To increase the number of participants covered by the statistical survey research,

To cover other dimensions and aspects that could influence the adoption of DT and GI in SSI,

To take into account other types of cross-sectional social studies, like semi-structured interviews, in which questions with open-answers and dialogues are allowed to shed light on specific topics not covered by the survey questionnaire.

CRITICAL RESEARCH LIMITATIONS

In spite of the successful implementation of the current cross-sectional descriptive quantitative approach in this work, this study encountered a few number of obstacles and restrictions that did bound and limit the broad collection of beneficial databases. These barriers and obstacles did include the following:

Feel of privacy to fill in the survey questionnaire by limited number of the study sample due to critical information related to their information in the SSI,

Larger portion of the study sample (approximately 75%) have an age of less than 34 years old, implying that they do not have rich experience and noteworthy facts and knowledge like those, whose age is remarkably higher.

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Author Contributions: Investigation • Conceptualization • Statistical Analysis • Software Tools • Writing. All authors have read and confirmed the published version of the manuscript.

Data Availability Statement: Not applicable.

Conflict(s) of Interest: The authors do declare no conflicts of interest.

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