

Article

Scaling Up Banking Performance for the Realisation of Specific Sustainable Development Goals: The Interplay of Digitalisation and Training in the Transformation Journey

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Abstract: The main purpose of this study was to examine how digitalisation with a mediating role of training influences banking performance and further how banking performance helps in realisation of specific sustainable development goals (SDGs). Data were gathered from 402 employees from public, private, and foreign sector banks. Digital culture, digital technologies, and digital skillsets are the sub-scales of digitalisation. For training, three types of training (on the job training, off the job training, and special training) were considered. Banking performance was measured through balanced score card covering customer, financial, internal business process, and innovation and learning perspective. This study considered SDG1: eradication of poverty; SDG5: gender equality; and SDG8: economic growth and decent work. Partial Least Square-Structural Equation Modelling was used to examine relationship among digitalisation, training, banking performance, and the realisation of specific sustainable development goals (SDG1, SDG5, and SDG8). The results highlighted that digitalisation has a positive association with training and with banking performance (with β values of 0.692 and 0.531). The direct effect of digitalisation on banking performance (with β value is 0.316) was significant; however, the effect was enhanced when training was used as a mediating variable between digitalisation and banking performance (β : 0.367). Furthermore, the results suggest that banking performance has a positive association with realisation of specific SDGs (β : 0.867). In the designed model, it can be seen that the predictors (digitalisation and training) explained 61.1 percent of banking performance. This paper, by combining digitalisation and training with banking performance, provided an integrated approach to contribute towards the realisation of sustainable development goals (SDG1, SDG5, and SDG8). The final integrated model with digitalisation, training, and banking performance as predictors explained 75.6% of variation in exogenous variable, i.e., the realisation of specific SDGs. The results indicate an important role of digitalisation and training in scaling up banking performance for the realisation of specific SDGs.



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1. Introduction

The rapid advancements in technology and changes in today's global marketplace have cast their impact on banking systems. Digital transformation and the adoption of new technologies in banking raise many questions about how the banking performance has been affected by these changes. A strong banking system guarantees sustained growth in an economy. However, as indicated by [1], banking system stability has differing effects on economic sustainability of different economies. The task of sustenance in banking acquires more significance due to the global financial crisis of 2008. Digitalisation reshapes the conventional interface between customers and banks. Digitalisation facilitates access to communication channels to enthusiastically interact with the banks and other customers

via online customer care services [2]. How do digital technologies impact financial services need to be considered? The impact of digital finance on financial inclusion and financial stability is vital [3]. The paper [4] examines how Fintech innovations affect commercial banks and their total factor productivity through disruptive technologies. The results highlight that digitalisation investment has contributed to significant productivity improvement for commercial banks in China. Digitalisation is embracing technologies for their efficient banking operation and majority of banking institutions adopt financial technology for the digital transformation, ignoring the importance of digital culture [5]. Only a few studies have recognized the importance of culture in the acceptance of technology [6,7]. Digitalisation is a process of equipping the employees digitally to face the new challenges affecting the banking sector. Digitalisation is the result of transition of the nature of interactions between the banks and their customers with better data analysis and better communication [7]. Digitalisation scale has been disintegrated into three sub-scales, i.e., digital culture, digital technology, and digital skillsets. Culture is the integration of values, ethics, and beliefs of the banking employees to generate deliverables. Digital culture assists in creating a customer centric environment, enabling banks to render reliable and easily accessible services [8]. The results, as propounded by [6], indicate a positive impact of digitalisation on innovation; however, the same does not hold true for digital culture. In contrast, the cultural effect emerges significantly in influencing the use of digital banking [7]. This calls for further investigation related with digital culture as a sub-construct of digitalisation. The outcome of [9] suggests that organisations need to accept new digital technologies and enhance their digital capabilities to emerge as innovation leader. Digital technology with digital skills may help the banking services to be more user-friendly and efficient. Digital skills are the essential attributes needed to assist the bank employees for adopting technological advancements. There is a growing need for digital skills in the banking industry to become acquainted with the application development, web programming, and user interface design [10]. Only a few models indicate the growing importance of culture as an enabler of digital transformation effort and research about digital transformation maturity at a holistic level is inadequate and, thus, requires an added attention [11]. This induces the need to assess whether digitalisation with sub-scales of digital culture, digital technology, and digital skillsets are positively associated with banking performance.

Digitalisation calls for the training and retraining of the existing workforce [12]. As perceived by prior literature, there is little evidence that shows that technological advancements are easily handled by the employees after receiving appropriate training [13,14]. The three types of training considered are: on the job, off the job, and special training. There is a need to provide the appropriate type of training to the employees in view of digital transformation. Training is reactive rather than proactive and the basic objective of the banks is to vitalize the employees with the right type of training to manage the customer redressal and to streamline the needs assessment process before the actual training process [14]. The goal of the banking industry is to enhance the banking performance by means of proper and channelized training and strategies to reskill or upskill the bank employees [12,14]. An integrated framework is proposed by [15] to associate factors related with technology, customers, and financial performance. The outcome of [16] divulged the importance of strategy and management, technology and regulation, customers, and employees for smooth implementation of digitalisation in banking. Thus, digitalisation in the banking sector is still being researched from various perspectives, taking country-specific factors [14], training perspective [12], and management perspectives [16].

As highlighted by [17], digital innovation in the banking sector began with money replacing the barter systems, and then wax seals being replaced by digital signatures. Preferred models include Technology Acceptance Model [18], Theory of Planned Behaviour [19], and Unified Theory of Acceptance and Use of Technology [20]. Digital banking adoption in the Kingdom of Saudi Arabia has been examined using TAM with an added construct of trust. The results indicated that both the components of Technology Acceptance Model, i.e., perceived ease of use and perceived usefulness along with trust,

had a significant influence on the adoption of digital banking in Saudi Arabia [21]. The Unified Theory of Acceptance and Use of Technology was used by [22] to comprehend the significant predictors of the bankers' intention to use blockchain technology. Facilitating conditions, performance expectancy, and initial trust emerged as important antecedents for bankers' intention to use blockchain technology. Again, the results by earlier studies indicate diversity in results. Perceived risk and security risks have also been pointed as barriers in adoption of digital banking. Outcomes by [23] have highlighted that perceived risk positively moderates the effect of information quality on perceived diagnosis. Ref. [24] suggests that banks' contribution to systematic risk has risen approximately by 48% amid the COVID-19 pandemic. In view of these changes in the banking sector, the importance of digitalisation and training in the transformation journey needs to be examined, as the customer wants reduced risks with enhanced services. Earlier literature suggests various measures to ease out digital transformation in banks. As revealed by [25], digital financial literacy is a vital predictor of financial decision-making. Ref. [26] advocated reputation generated by corporate sustainability to redress digitalisation drawbacks, which may also enable to handle risks and fraud. According to [27], the main external risk of Santander Bank in 2018 was fraud in the use of online payments. These issues need a more detailed analysis.

For the adoption of digitalisation, a strategic training blueprint may be required to increase the efficiency of the banking staff to not only scale up bank performance but also to meet the sustainable goals and provide holistic achievement of bank's goals. Though there are studies covering digital transformation, only a few studies focus on examining the interplay of digitalisation and training on banking performance and for the realisation of specific sustainable development goals. This study considered SDG1, i.e., eradication of poverty; SDG5, i.e., gender equality; and SDG8, i.e., economic growth and decent work.

Need for the Study

Prior studies covered the complexities of the financial system and obstacles to the adoption of digital banking. Some earlier studies have examined the relationship among digitalisation, nature of training, and banking performance, but to the best of our knowledge, there are negligible studies that have taken this relationship towards realisation of specific SDGs [28–30]. Against the above backdrop, it will be critical to examine the following research questions.

RQ1: *Whether there is an influence of digitalisation on banking performance?*

RQ2: *Does training mediate between digitalisation and banking performance?*

RQ3: *Is banking performance positively associated with the realisation of specific sustainable development goals (SDG1, SDG5, and SDG8)?*

RQ4: *Does digitalisation with mediation of training influence banking performance, which helps in the realisation of specific sustainable development goals (SDG1, SDG5, and SDG8)?*

In line with the proposed research questions, an attempt has been made to uncover the influence of digitalisation with mediation of training on banking performance and for the realisation of specific SDGs.

This was a perception-based study obtaining inputs through a self-structured questionnaire. The survey was administered both in online and offline mode (by google forms, e-mails, and telephonic conversations) due to COVID-19 restrictions in India. The study used multi-stage sampling, selecting five banks each from public sector, private sector, and foreign sector in the first stage. Data were collected from managerial and non-managerial employees from these banks in the second stage. A total of 402 valid responses were recorded and used for analysis. Partial least square-structural equation modelling was used to seek an answer to the above-mentioned research questions. PLS-SEM has been considered as a good predictive tool, as suggested by [31].

Section 1 underlines the background and need for the study. Section 2 presents the literature review and hypotheses development. Materials and Methods are elaborated in Section 3. Scales, methods, and conceptual model form integral sub-sections of Materials and Methods. Section 4 offers analysis and findings, where Section 4.1 depicts the results of the measurement model, and Section 4.2. presents the outcomes of the structural model. Discussion and Conclusions are outlined in Section 5, which is followed by Implications (Section 6), limitations, and future scope (Section 7).

2. Literature Evaluation and Hypotheses Development

Economies are changing very swiftly. The basic governmental issues, such as digital transition and social empowerment, are transforming economies still further. The advent of digitalisation, competition, economic factors, and political influence has led to complexities in the global economy. Be it artificial intelligence (AI) or data analytics (DA), digital culture is transforming the structure of the organizations, making it vital for them to adopt a holistic approach to increase the knowledge base for handling customer queries and to face market competition. As opined by [32], organizational culture is a major hurdle in the adoption of digitalisation. This was also supported by [33]. As opined by [34], there is a need to create a wireframe for the incorporation of the digital culture in an organization with right strategies and adequate managerial support.

Financial institutions confront an important challenge to link apposite digital approaches and actions in their digital transformation journey. Businesses frequently face cultural challenges and difficulty in linking information technology with other business processes [35]. Digital technology has a significant impact for managing facts, figures, and records [36,37], but organizational effectiveness is also dependent on the behaviour and training of the employees too. The study by [38] examines the acceptance rate of digital transformation in the banking sector in Greece. The researchers suggest that banks need to plan directed educational programs for employees to facilitate the transition to the new digital era. The need to train employees on how to use new technologies has also been highlighted by [39]. The banks are adopting digitalisation, but how digitalisation along with training assists in improving banking performance needs further analysis.

Theoretical Lens and Hypotheses Development

The study covered three aspects of digitalisation, viz., digital culture, digital technology, and digital skillsets needed for digital transformation of banks. An effort was made to understand how these three aspects of digitalisation influence banking performance. The Technology Acceptance Model introduced by [18] provides a basis for examining the latest technological advancements in the banking industry. The Technology Acceptance Model was considered in the current study with reference to acceptance for digitalisation in banking. The study examines the relation of digitalisation with banking performance directly and indirectly with training as a mediating variable. For banking performance [40], a balanced score card (BSC) with four perspectives, viz., (i) financial; (ii) customer; (iii) internal business process; (iv) innovation and learning perspectives, was considered.

Digitalisation does not only include technological advancements but also incorporates the digital skillsets required to utilize the technological interventions. However, the outcomes indicate that the level of 21st-century digital skills varies considerably in knowledge-intensive industries, and the banking sector is not an exception [41]. Using TAM, ref. [42] concluded that the intentions and usage behaviour are positively related. Additionally, social influence enhances the technology self-efficacy of the employees, which augments the role of the managers as effective supervisors to convey the benefits of technological adoption for attaining the goals of the organization. Researchers investigate the impact of the drivers of financial inclusion, financial literacy, and financial initiatives on sustainable growth and the outcomes suggest usage, digitalisation, and FinTech as significant drivers of financial inclusion [43]. Digital revolution in the banking market opens doors for cutthroat competition, sets the regulatory measures in motion, raises the

customer expectations, and induces technological innovations [44]. However, the authors considered cyber-attacks and right technology choice as critical challenges. The digitalisation of banking is beneficial for banking institutions as well as customers [45]. The result of Vietnamese commercial banks highlights that the digital transformation has a positive influence on the performance [46]. New agile workflows and strategies are required to drive the digital culture. Sustainable growth aids the process of digital transformation and generates the value-added resources for the clients [47]. Against this backdrop, it will be worthwhile to examine whether digitalisation is a multi-dimensional construct, consisting of digital culture, digital technology, and digital skillsets. Amidst multiple challenges, the ecosystem of the digital economy is hugely affected, which further requires a strong and dynamic digital ecosystem based out of the recreation, re-evaluation, and adoption of artificial intelligence over the obsolete traditional principles of administration and control [48]. The process of digitalisation is an ongoing and continuous process. A secure and a sustainable environment is expected from policymakers for boosting digital transformation in banks. Digital skillsets include the cognitive ability, physical ability, content skills process skills, problem-solving skills, soft-skills, and resource management skills. [49] highlighted that digital technology in banks enhances the comfort of customers while diminishing operation costs and human error. Digitalisation generates new prospects for growth as highlighted by [39]; however, there is a need for a smooth transition through training. Training assists in acquiring the knowledge and skills essential for people to execute their jobs satisfactorily [50,51]. Thus, training is an operational instrument to improve the employees' and organizational performance [52]. There are some variations in findings of earlier studies, as researchers' favouring the Resource-Based View (RBV) [53,54] indicate a focus on firm-specific training, while researchers like [55,56] have highlighted the role of general training. In view of these diversities, we included nature of training and wanted to examine its direct and its mediating role on banking performance.

The related hypotheses are:

- H1.** *Digitalisation is positively associated with the nature of training.*
- H2.** *Digitalisation is positively associated with banking performance.*
- H3.** *Nature of training is positively associated with banking performance.*

Performance and growth in the banking industry is the result of collaboration of the factors affecting the internal and external environment of the banks. Performance in banking sector can be evaluated from the perspectives of financial stability, customer relationship management, internal business process, and an environmentally friendly management system, and all these have a significant impact on the sustainability of the banks [57]. The current study used a balanced score card for measuring banking performance [40]. Profits, or financial metrics, are generally used by the majority of researchers to gauge banking performance [58,59]. Moreover, ref. [60] highlighted a direct and strong link of base salary and short-term incentives with performance of managers. Conversely, perks and long-term rewards were considered as weak motivators. Financial perspective is a good indicator of performance, but without considering customer satisfaction, the banking industry may not be able to sustain performance. Consumers' brand loyalty, trust, and commitment have a positive impact on the consumer awareness and loyalty [61]. Customer perspective helps to provide deeper insights on retention of customers, and result in long-term profits for the organization [62]. Moreover, the primary aim of the banks is to equip the employees to meet the customer requirements by addressing them in a timely fashion [63]. Employee responsiveness, social responsibility, services innovation, positive word of mouth, competence, and reliability influence customer satisfaction [64], which helps to enhance loyalty [65]. As customers are market governors, it becomes crucial for banks to gain more insights about their customers. Thus, customer perspective is an important component of banking performance.

Digital services and mobile banking apps are becoming an integral part of peoples' lives, due to ease of use and convenience. However, there are issues related to risk, trust, and legal framework that acted as constraints for the adoption of mobile banking apps in Nigeria [66]. The managerial factors and workplace-related factors have a positive impact on the business performance [67]. The selling and product or service cost per unit could be reduced with the help of the balanced score card and its internal business process perspective [68]. Internal business process perspective (IBPP) consists of the on-time accomplishment of tasks, attaining short cycle times, and high-quality internal processes as a major feature of this perspective [69]. Hence, internal business process perspective is also important for banking performance. Innovation and learning perspective is the stage-by-stage process wherein the organizations take time to absorb and consider employees opinions. This helps in retaining and engaging customers for a long tenure [70,71]. From an innovation and learning perspective, there is a need to focus on the intangible assets, internal skills, and capabilities of the employees [72].

Digitalisation has been influencing the banking industry at large, which further compels us to understand the customer perspective of banking performance [73]. Banks information transparency has a huge impact on the financial well-being of the consumers and significantly influences their decisions. The information shared by the banks with the customers has a positive influence on them and increases the credibility of the banks [74]. The advancements within the banking industry have made it necessary to adhere to the challenges faced by the customers and address them on a regular basis to maintain an equilibrium between digital culture and the customer relationships. The banking sector is trying to tread towards "Digital Banking" and "Cyber Banking". Will this path contribute to easing the burden of bank employees? [75].

A sound, well-structured, and sustainable banking system is the ultimate key to attain the actual growth of the country. Legal and environment factors are also important for growth [76]. The earlier literature reveals that the Indian banking industry has shown slow progress with respect to sustainable growth. The policies of public and private sector are also divergent in relation to focus on growth. The public sector banks have been effective in addressing the issues related to social environment consisting of micro frame, gender-related issues, and community-related issues for development. Conversely, the focus of the private sector banks has been on the environmental factors. They are addressing the issues related to the environment, i.e., green building, innovative products, and services [77].

In the current study, an attempt was made to examine the impact of digitalisation through nature of training on banking performance and for the realisation of specific sustainable development goals (SDG1, SDG5, and SDG8). These three sustainable development goals are very vital, which induced us to include them in the present study. SDG1 is to end poverty in all forms everywhere and SDG5 is to achieve gender equality and empower all women and girls. Banks, especially public-sector banks, are moving in this direction and more than 2600 branches are headed by women officers, spread across geographies and different levels of hierarchy [78]. SDG8 is to promote sustained, inclusive, and sustainable economic growth. SDG8 relates with increasing job prospects and, hence, is highly important for banks. The responsible finance portfolio could help to promote financial health, improve economic growth, and promote social welfare. Banks visualize a perceived benefit to create new financial services and products for firms and households to promote sustainable development goals [79]. A few earlier studies have reported an affirmative association among sustainability systems, disclosures, and financial performance of banks [80,81]. When the choice of bank is associated with environmental performance, the relation turns negative [82]. Thus, in view of varied results, it becomes important to examine a link of digitalisation with training on banking performance and further relation of banking performance for the realisation of specific sustainable development goals, which are, in this case, SDG1, SDG5, and SDG8. The related hypothesis is:

H4. *Banking performance is positively associated with the realisation of specific sustainable development goals (SDG1, SDG5, and SDG8).*

Along with the direct relations, an effort was also made to test the specific indirect relations. The hypotheses related with indirect effects are:

H5. *Nature of training mediates between digitalisation and banking performance.*

H6. *Digitalisation has a positive and significant effect on banking performance and realisation of specific sustainable development goals (SDG1, SDG5, and SDG8).*

H7. *Nature of training has a positive and significant effect on banking performance and realisation of specific (SDG1, SDG5, and SDG8).*

H8. *There exists a positive and significant association among digitalisation, nature of training, banking performance, and realisation of specific Sustainable Development Goals (SDG1, SDG5, and SDG8).*

The examination of these indirect effects will help obtain a deeper understanding of the interplay of digitalisation and training in scaling up banking performance for the realisation of specific sustainable development goals.

3. Materials and Methods

3.1. Data and Sample

The current research was a perception-based study using survey as a major instrument for collecting data. All the respondents were duly informed about the reason for undertaking the present research. The demographic variables of the respondents are shown in Table 1. The data being vast, the selection of banks was carried out based on major consolidations and merger acquisitions with the number of branches being the primary domain for selection. The study used multi-stage sampling. In the first stage, 5 banks from public sector, 5 from private sector, and 5 from foreign banks were selected. In the next stage, data were collected from bank employees at managerial and non-managerial levels, i.e., 214 and 188 responses, respectively. The total sample had 233 males and 169 females. There were 166 respondents who had undertaken on-the-job training, 84 who had undertaken off-the-job training, and 152 were exposed to special training.

Table 1. Demographic variables.

Participants	Public Sector Banks	Private Sector Banks	Foreign Sector Banks	Total
Total Responses	189	191	22	402
Gender				
Males	107	111	15	233 (57.96%)
Females	82	80	7	169 (42.04%)
Levels				
Managerial Level	101	96	17	214 (53.23%)
Non-Managerial Level	88	95	5	188 (46.76%)
Type of Training				
On the Job	75	78	13	166 (41.29%)
Off the Job	42	38	4	84 (20.89%)
Special	72	75	5	152 (37.81%)

Data were collected using physical and online survey in phase 1, due to precautions in view of COVID-19. In second phase, data were personally collected from 202 respondents. As foreign banks are fewer and mostly located in state capitals, personal visits helped to procure data from employees of these banks, but despite frequent visits, their participation in the sample was low. Data were procured from major foreign banks like Citi Bank, New Delhi, India; Deutsche Bank, New Delhi, India; thus, their responses have been included for data analysis. There was not much difference in data collected in both the waves, as highlighted in Table 2. The sample details reflect that both the waves had similar mean and standard deviations. There was not any abnormality in data and, hence, it was time to proceed ahead with further analysis.

Table 2. Sample details.

Construct	Wave 1 (<i>n</i> 1 = 200) February 2022–July 2022		Wave 2 (<i>n</i> 2 = 202) November 2022–January 2023	
	Mean	Standard Deviation	Mean	Standard Deviation
Digitalisation				
Digital Culture	4.123	1.049	4.115	1.161
Digital Skill-Sets	4.176	0.889	4.368	0.912
Digital Technology	4.031	0.820	4.025	0.896
Nature of Training				
On the Job Training	4.023	0.849	4.111	0.829
Off the Job Training	4.016	0.869	4.201	0.878
Special Training	3.431	0.820	3.331	0.802
Banking Performance				
Financial Perspective	4.331	0.878	4.345	0.876
Customer Perspective	4.014	0.844	4.002	0.847
Internal Business Process Perspective	3.908	0.850	3.906	0.869
Innovative and Learning Perspective	4.001	0.877	4.103	0.856
Sustainable Growth				
SDG1	4.009	0.811	4.048	0.861
SDG5	3.953	0.862	4.055	0.922
SDG8	4.014	0.857	4.025	0.916

3.2. Measures

Initially, the scale was validated by 30 professionals from banks and faculty of management and commerce. The questionnaire was modified as per the suggestions received for language, difficulty level, and based on inputs received from experts. Few items were modified to improve language clarity. The details of questionnaire with literature support are provided in Table 3.

Table 3. Measures with supporting references.

Scale	Supporting References
Digitalisation	
Digital Culture	
i. Banks are using digital channels for providing customer service.	
ii. Banks are using digital channels (online, social media) to market their products.	[9,27,35,37,49]
iii. Digital culture positively affects employee engagement with customers.	
Digital Skillsets	
i. There is a strong need for acquiring training in digital competencies to cope with e-banking.	
ii. Bank employees are well equipped in using digital tools.	[6,8,9,34]
iii. Digitization has forced to cultivate technical skills for the employees.	

Table 3. *Cont.*

Scale	Supporting References
Digital Technology	
i. Use of digital technology has helped to link customer facing and operational processes.	
ii. Bank employee's role involves a significant level of engagement with digital technology.	[10,11,48,49]
iii. Use of digital technology enhances customer experience.	
Nature of Training	On the Job Training Off the Job Training Special Training
	1 2 3 4 5 1 2 3 4 5 1 2 3 4 5
i. Do you feel that the training was worth your time and didn't interfere with the ethical work environment?	
ii. Do you think that it was provided as per the requirements of the banks.	
iii. Do you think that training provided was sufficient to attain the goals of the organization and handle the customer grievances?	
iv. Do you think that the types of training like Job rotation from on the job training, classroom lectures from off the job training and training for handling cybercrimes from special training has an impact on the presentation style?	[50-56]
v. Do you think that the training session helped Induction training from on the job training, conferences from off the job training and training to develop leadership skills to accommodate the personal needs?	
vi. Were the training activities engaging and efficiently provided to all the level of the employees? For example, internship, simulation training, training for stress management, etc.	
Banking Performance:	
Internal Business Processes	
i. New Digitalised technology and Training has helped in providing customer services on time by the banks.	
ii. New Digitalised technology and Training has helped in handling the after sales services.	[40,58-60]
iii. New Digitalised technology and Training has increased employee satisfaction and helped in handling grievances in time.	
Internal Business Processes	
i. New Digitalised technology and Training has assisted in quickly resolving and reducing the error rates.	
ii. New Digitalised technology and Training assisted in establishing a timeline and protocol for harder-to-solve problems and reducing the operational errors.	[40,61-65]
Financial Performance	
i. New Digitalised technology and Training has helped to increase the revenue growth.	
ii. With new Digitalised technology and raining the market share has improved, with Digitalisation.	[40,68-71]
iii. The banks have become efficient in maintaining the liquidity ratio.	
iv. The banks have become effective in maintaining the customers' credit deposit ratio.	
Innovation and learning perspective	
i. New Digitalised technology and Training has helped in fuller utilization of resources,	
ii. There is more focus on employee engagement as it helps to increase the overall productivity of the bank.	[40,72]
iii. New Digitalised technology and Training helped in increasing the focus on reusing and recycling.	
Realisation of Specific SDGs (SDG1, SDG5, SDG8)	
i. SDG1 End Poverty in all forms everywhere.	
ii. SDG5 Gender equality Achieve gender equality and empower all women and girls.	[47,76-79]
iii. SDG8: Decent work and Economic Growth.	

3.3. Research Methods

Smart-partial least square was applied for determining the projected research model. This study favored using partial least square-structural equation modelling (PLS-SEM), against covariance-based structural equation modelling (CB-SEM). The latter was the preferred choice of earlier researchers for interpreting complex inter-relationships between the observed and latent variables [83]. Recent researchers have examined the wide applicability of Smart-PLS for analysing the relation of independent and dependent variables [84,85]. Keeping in view the wide usage and overall acceptance of PLS-SEM, it was apposite to employ variance-based PLS-SEM, rather than covariance-based CB-SEM, in the current research. This study examined the direct effect of digitalisation on banking performance and examined the mediating effect of training between digitalisation and banking performance. Additionally, the research examined the relation of banking performance with realization of specific SDGs. Any data collected through sampling must be free from Common method bias (CMB). For checking CMB, Harman's single factor score, which was (46.5), was used. The results reflected absence of CMB [86].

3.4. Conceptual Model

The research model is presented in Figure 1.

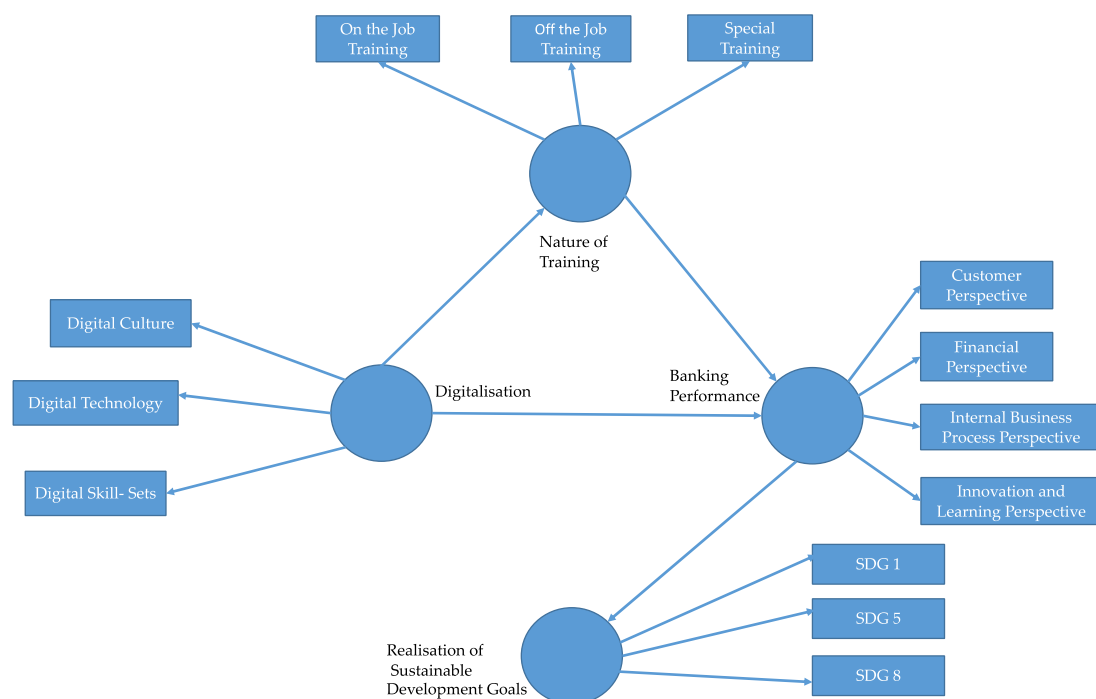


Figure 1. Conceptual model reflecting influence of digitalisation and nature of training on banking performance and realisation of specific sustainable development goals (SDG1, SDG5, and SDG8).

The conceptual model reflects **H1** relating to the direct influence of digitalisation on nature of training. **H2** is to examine the direct influence of digitalisation (i.e., integration of digital culture, digital technology, and digital skillsets) on the banking performance (measured through financial; customer; internal business process; innovation and learning perspectives). **H3** considers direct effect of nature of training on banking performance and **H4** relates banking performance with realisation of specific sustainable development goals (SDG1, SDG5, and SDG8).

To examine the mediation of the nature of training between digitalisation and banking performance, **H5**: was considered by taking (**H1** $\times$ **H3**) and by examining the direction and significance of relations. Additionally, **H6**: was proposed considering (**H2** $\times$ **H4**). The next proposed hypothesis **H7**: will be examined by considering (**H3** $\times$ **H4**). Finally, the relationship among digitalisation, nature of training, banking performance, and sustainable goals was examined through was covered by considering (**H3** $\times$ **H4**) and also by examining R-Square.

Digital culture is the acceptance and creation of a digital environment open to innovations and technological advancements to improve customer experience, increase efficiency of employees, and to provide an enhanced risk management mechanism. Additionally, the digital skillsets comprising of data analytics, coding, web designing, digital marketing, and cyber security are the need of the hour that encourage the employees of the banking sector to gauge the dynamic environment of the banking industry and respond in accordance with it. Digitalisation in banking demands strategic training programs. There is a need to examine how the nature of training (on the job, off the job, and special training) influences banking performance. Banks being the part of the society have certain responsibilities towards the society. Realisation of SDGs comes as an extension of repayment to the societal causes by the banking industry. The banking industry is responsible for maintaining the (SGD 8) financial health of the economy by promotion of financial inclusion, providing access to financial services, supporting entrepreneurship; by investing in renewable energy and reducing carbons. For realisation of SDG1, banks need to provide financial aid to poverty-stricken regions and help in their development and SDG5 implicates provision of financial assistance to women and provide them with proper resources initiating and developing business. Is understanding how the banking performance helps in realisation of SDG1, SDG 5, and SDG 8 and moves to a broader goal of sustainability along with societal and environmental agendas [87] in need more exhaustive analysis?

4. Analysis and Findings

4.1. Measurement Model

Primarily, internal consistency was checked through Cronbach's alpha (α). As reflected in Table 4, all scales had (α) greater than 0.70, thus depicting good reliability. The next step was to check scale reliability using composite reliability, which was also greater than 0.70. The average variance extracted, (AVE) was more than the critical value of 0.50 [88,89].

Table 4. Reliability and validity.

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Banking performance	0.920	0.926	0.943	0.806
Digitalisation	0.882	0.885	0.927	0.809
Nature of Training	0.835	0.851	0.900	0.749
Realisation of specific SDGs	0.835	0.835	0.901	0.752

Discriminant validity has been indicated through Table 5. $\sqrt{\text{AVE}}$ should be higher than the correlation (r) values of constructs [90]. As seen in Table 5, these were greater than 'r' of constructs. Discriminant validity was also examined by HTMT ratio, and all values were less than the threshold of 0.85 [91].

Table 5. Discriminant validity.

Fornell Larker Criteria				
	Banking Performance	Digitalisation	Nature of Training	Realisation of Specific SDGs
Banking Performance	0.898			
Digitalisation	0.683	0.900		
Nature of Training	0.749	0.692	0.866	
Realisation of specific SDGs	0.856	0.583	0.629	0.867
HTMT Ratio				
Banking Performance				
Digitalisation	0.756			
Nature of Training	0.845	0.785		
Realisation of specific SDGs	0.812	0.679	0.738	

VIF values in PLS-SEM were also assessed for further investigation. As reflected through Table 6, the values were less than 3.5 suggesting absence of multi-collinearity. In summary, according to the results presented, discriminant validity has been established. Thus, the measurement model is reliable and valid.

Table 6. VIF.

Outer VIF							
Constructs	VIF	Constructs	VIF	Constructs	VIF	Constructs	VIF
Digital Culture	2.194	OFFJT	2.252	FP	2.317	SDG1	1.761
Digital Skill-Sets	2.628	ONJT	2.316	IBP	3.483	SDG5	2.191
Digital Technology	2.766	SPT	2.764	CP	2.446	SDG8	2.013
Inner VIF							
	Banking Performance	Digitalisation	Nature of Training	Realisation of Specific SDGs			
Banking Performance				1.000			
Digitalisation	1.917		1.000				
Nature of Training	1.917						
Realisation of specific SDGs							

All outer loadings represented in Table 7 were greater than 0.70 and they were significant too ($p \leq 0.01$). Consequently, we could move to a structural model. Outer loadings suggest that digital technology, as a sub-construct of digitalisation, had the highest loading, and this was followed by digital skillsets and digital culture. All the sub-constructs of digitalisation were significant with $p \leq 0.01$, which projects that digitalisation is a multi-dimensional construct, consisting of digital culture, digital technology, and digital skillsets. Moreover, outer loadings for all four perspectives of banking performance (viz., financial, customer, internal business process, innovation and leaning) were also ≥ 0.70 and were significant ($p \leq 0.01$). Similarly, all the sub-constructs of sustainable development goals (viz., SDG1, SDG5, and SDG8) had loading ≥ 0.70 and $p \leq 0.01$. SDG5, related with gender equality, had higher loading than SDG1 and SDG8.

Table 7. Outer loadings.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	p-Values
Digital Culture ← Digitalisation	0.876	0.880	0.056	15.549	0.000 ***
Digital Skill-Sets ← Digitalisation	0.905	0.907	0.012	73.041	0.000 ***
Digital Technology ← Digitalisation	0.917	0.919	0.010	91.254	0.000 ***
ONJT ← Nature of _Training	0.873	0.872	0.016	54.598	0.000 ***
OFFJT ← Nature of _Training	0.862	0.861	0.017	51.649	0.000 ***
SPTG ← Nature of _Training	0.862	0.862	0.012	69.921	0.000 ***
FP ← Banking Performance	0.848	0.847	0.023	37.572	0.000 ***
CP ← Banking Performance	0.912	0.912	0.012	77.449	0.000 ***
IBP ← Banking Performance	0.905	0.905	0.011	83.758	0.000 ***
I&LP ← Banking Performance	0.924	0.925	0.009	100.100	0.000 ***
SDG1 ← Realisation of specific SDGs	0.846	0.845	0.021	41.160	0.000 ***
SDG5 ← Realisation of specific SDGs	0.888	0.887	0.014	64.057	0.000 ***
SGP8 ← Realisation of specific SDGs	0.868	0.867	0.016	54.563	0.000 ***

Note: self-complied by the author $p \leq 0.001$ ***.

4.2. Structural Model: Path Analysis

Having established reliability and validity in the assessment of the measurement model, the structural model was applied using the bootstrapping technique with 10,000 sub-samples. The assessment of PLS-SEM includes path coefficients to evaluate the significance of structural model relationships, R^2 value estimated for accuracy, and f^2 is used to assess the significant impact of the independent variable on the dependent variables. The findings of the path model are displayed in Figure 2 and Table 8.

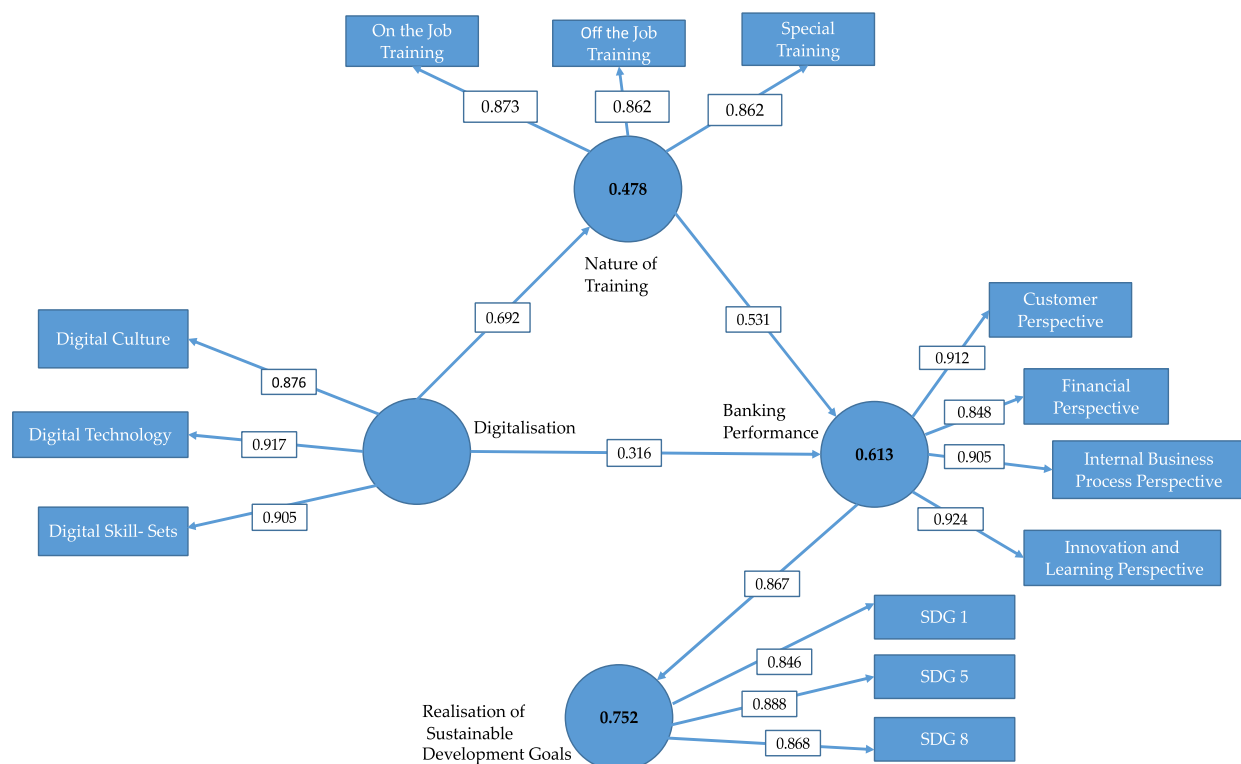


Figure 2. PLS SEM Model reflecting influence of digitalisation and nature of training on banking performance and realisation of specific sustainable development goals (SDG1, SDG5, and SDG8).

Table 8. Path coefficients.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T-Statistics (O/STDEV)	p-Values	f ²
H1: Digitalisation → nature of training	0.692	0.694	0.028	24.362	0.000 ***	0.917 (L)
H2: Digitalisation → banking performance	0.316	0.321	0.058	5.411	0.000 ***	0.153 (M)
H3: Nature of training → banking performance	0.531	0.526	0.051	10.448	0.000 ***	0.380 (L)
H4: Banking performance → realisation of specific sustainable development goals (SDG1, SDG5, and SDG8).	0.867	0.868	0.014	61.303	0.000 ***	3.038 (L)
Mediation/Indirect Effect						
H5: Digitalisation → nature of training → banking performance	0.367	0.365	0.036	10.079	0.000 ***	
H6: Digitalisation → banking performance → realisation of specific sustainable development goals (SDG1, SDG5, and SDG8).	0.274	0.279	0.051	5.387	0.000 ***	
H7: Nature of training → banking performance → realisation of specific sustainable development goals (SDG1, SDG5, and SDG8).	0.460	0.457	0.045	10.127	0.000 ***	
H8: Digitalisation → nature of training → banking performance → realisation of specific sustainable development goals (SDG1, SDG5, and SDG8).	0.318	0.317	0.033	9.685	0.000 ***	
	R-Square		Adj. R-Square			
Nature of Training	0.478		0.477			
Banking Performance	0.613		0.611			
Realisation of specific SDGs (SDG1, SDG5 and SDG8)	0.752		0.752			

Note: self-complied by the author $p \leq 0.001$ ***.

The β -value of digitalisation with nature of training was 0.692 (T-Statistics: 24.362 and $p \leq 0.001$) and the relation was positive, thus suggesting it was a significant predictor of nature of training. Accordingly, **H1:** is empirically supported. Similarly, **H2:** was supported by the relationship between digitalisation and banking performance (β -value: 0.316; T 5.411; $p \leq 0.001$). In case of nature of training influencing banking performance, the β -value was 0.531 (T 10.448; $p \leq 0.001$). This supports **H3**. Furthermore, the study also attempted to examine how banking performance is related with realisation of specific SDGs. β -value for banking performance and realisation of specific SDGs was 0.867 and was significant (T 61.303; $p \leq 0.001$). Thus, **H4:** has been empirically supported.

For a better understanding of the proposed model, the effect size values (f^2) were measured. An f^2 value above 0.15 was considered as a good enough effect (moderate effect), less than 0.02 was considered a small effect, and anything above 0.35 was a large effect. The findings for f^2 also can be seen in Table 8, and it was demonstrated that the path of banking performance → realisation of specific sustainable development goals had the largest effect size, which was followed by relation of digitalisation with nature of training ($f^2 = 0.917$) and nature of training with banking performance ($f^2 = 0.380$). The relation between digitalisation and banking performance was medium ($f^2 = 0.153$). R^2 for effect of digitalisation on nature of training was 0.478, and R^2 for effect of digitalisation and nature of training on banking performance was 0.613 and, further to digitalisation, nature of training and banking performance on realisation of specific sustainable development goals (SDG1, SDG5, and SDG8) was 0.751 (Figures 2 and 3).

Additionally, it was found worthwhile to check the mediation of the nature of training between digitalisation and banking performance. Mediation fits two linear structural equation models (SEMs) using three variables and interprets the model coefficients as causal effects [92]. It is essential to understand that researchers should interpret mediation analysis within the logic of theoretical inferences [93]. The theoretical details for training as mediating variable were provided in the literature review section. The related hypothesis was **H5 (H1 × H3): Nature of training mediates between digitalisation and banking performance**. In case of the indirect effect, β value was 0.367 (T 10.079; $p \leq 0.001$). As $H1 \times H3$ was 0.692, $*0.531$ (0.367) was greater than the direct effect (0.316); hence, **H5 (H1 × H3): Nature of training mediates between digitalisation and banking performance is also empirically supported**.

Complementary mediation exists when the indirect effect and the direct effect are both significant and point in the same direction [93]. According to our results, the direct effect was significant, and the indirect effect was also significant and the sign ($H1 \times H3$) was positive. This suggests the existence of complementary mediation as per [93] and partial mediation according to [92].

The next step was to examine **H6 (H2 × H4): Digitalisation has a positive and significant effect on banking performance and realisation of specific sustainable development goals (SDGs)**. With β -value 0.274 (0.316×0.867) and (T 5.387; $p \leq 0.001$), **H6** was validated empirically. An effort was made to examine **H7 (H3 × H4): Nature of training has a positive and significant effect on banking performance and realisation of specific SDGs**. The outcomes with β -value 0.460 (0.531×0.867) and (T 10.127; $p \leq 0.001$) supports **H7**.

Inclusively, the results are reflected in Figure 3 with the bootstrapping model. This figure represents the Beta-values and their significance level too. Moving to **H8: There exists a positive and significant association among digitalisation; nature of training; banking performance; and realisation of specific sustainable development goals (SDG1, SDG,5 and SDG8)**, the results indicate a β -value 0.318 ($H1 \times H3 \times H4: 0.692 \times 0.531 \times 0.867$) with (T 9.685; $p \leq 0.001$). β -value of 0.318 (T 9.685; $p \leq 0.001$) and $R^2: 0.752$ and adj. $R^2: 0.751$, assist to empirically support **H8**.

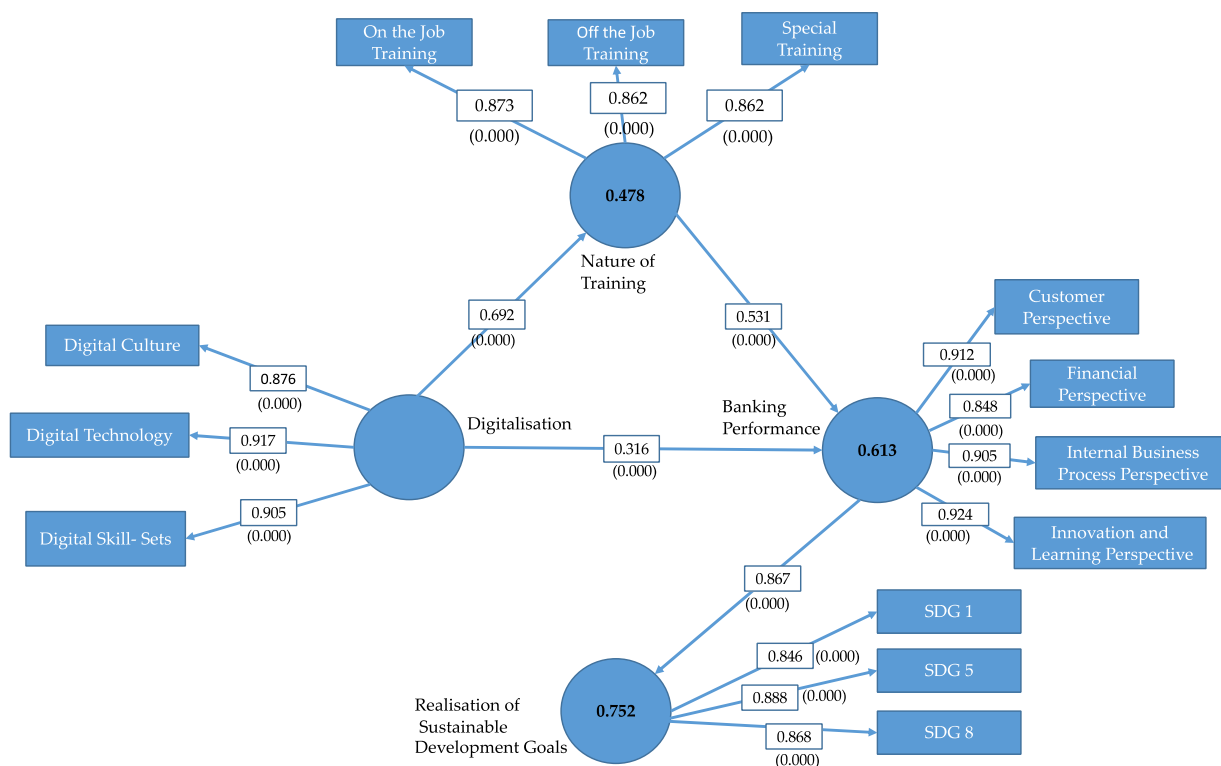


Figure 3. Bootstrapping model reflecting influence of digitalisation and training on banking performance and realisation of sustainable development goals (SDG1, SDG5, and SDG8).

It is important to examine the goodness-of-fit indices. The outcomes reflect that the Normed Fitness Index (NFI) was 0.817. The standardized root mean squared residual (SRMR) was 0.068, less than the threshold value of 0.08. The R^2 value examined the explanatory power of the model. R^2 : 0.751 suggests the important role of predictors (digitalisation, nature of training, banking performance) for the realisation of specific sustainable development goals (SDG1, SDG5, and SDG8). These outcomes indicate the importance of interplay of digitalisation and nature of training for scaling up banking performance and for the realisation of specific sustainable development goals (SDG1, SDG5, and SDG8).

5. Discussion and Conclusions

This study was undertaken to examine the link among digitalisation, nature of training, banking performance, and the realisation of specific sustainable development goals (SDG1, SDG5, and SDG8) in the Indian banking sector. The overall outcomes are presented in Table 9. Digital conversion in the banking sector across the globe has set new benchmarks for bank employees. In view of these vicissitudes, it may be critical to understand the digital transformation level and preparedness of Indian banks and bank employees for the same. The digitalisation scale is a multidimensional scale with three sub-scales, viz., digital culture, digital technologies, and digital skillsets. The vitality of all sub-scales has been established through outer loadings >0.70 . Digital technology with the highest loading is indicative of its extreme relevance. The importance of digital technologies in relation to banking and financial sector have been empirically proven through empirical works [9,36,37,94]. Employers need to accurately prepare their employees for a culture of change, as highlighted by [95]. This has been empirically supported by high loading and significance of digital culture in the current study. Digital revolution in banking is an incessant process that stimulates the external and internal milieu by restructuring internal business process and by recognizing importance of customers. The present research also supported these perspectives and their importance in banking performance. The increasing addition of digital services and tools could be an issue with organisations, as indicated by [96]. However, this can be overcome with proper training. Our results have supported a positive association between digitalisation and nature of training. Thus, acquiring proper training by employees to use digital technologies could help resolve critical problems and reduce risks, as it is important to handle frauds in online payments [27]. This research has endorsed the role of nature of training in improving the impact of digitalisation on banking performance and for the realisation of specific sustainable development goals. Training design, needs valuation, and delivery style positively influences employees' performance and further enhances organizational performance [97]. Digital payments and financial inclusion are two significant planks of cashless-ness in India [98]. Further researchers have also indicated how the acquisition of skills could directly affect financial decision-making and perceived financial well-being [27,99]. Future research could focus more on other parameters for gauging the effectiveness of training. Prior researchers highlighted the integral role of financial perspective in performance. Undoubtedly, the financial constraints need to be removed to enhance provision of loans to women and financial inclusion has the potential to enhance banking performance to help in the economy's developmental journey [49]. However, the current study indicated the increased importance of innovation and learning, internal business process, and customer perspectives in banking performance too. Thus, in case of digital transformation, these along with financial perspectives must be given importance.

Table 9. Overall outcomes.

Hypotheses	β -Values/R ²	<i>p</i> -Values	Status
H1: Digitalisation → nature of Training	β -value 0.692	0.000 ***	Supported
H2: Digitalisation → banking performance	β -value 0.316	0.000 ***	Supported
H3: Nature of training → banking performance	β -value 0.531	0.000 ***	Supported
H4: Banking performance → realisation of specific sustainable development goals (SDG1, SDG5 and SDG8).	β -value 0.867	0.000 ***	Supported
<i>Indirect Effect</i>			
H5: (H1 × H3): Digitalisation → nature of training → banking performance	β -value 0.361	0.000 ***	Supported
H6: (H3 × H4): Digitalisation → banking performance → realisation of specific sustainable development goals (SDG1, SDG5 and SDG8).	β -value 0.274	0.000 ***	Supported
H7: (H2 × H4): Nature of training → banking performance → realisation of specific Sustainable development goals (SDG1, SDG5 and SDG8).	β -value 0.460	0.000 ***	Supported
H8: (H1 × H3 × H4): Digitalisation → nature of training → banking performance → realisation of specific sustainable development goals (SDG1, SDG5 and SDG8).	β -value 0.318	0.000 ***	Supported
	R ² : 0.752		Supported

Note: self-compiled by the author $p \leq 0.001$ ***.

This paper investigated the relation of digitalisation through nature of training with banking performance and realisation of specific sustainable development goals (SDG1, SDG5, and SDG8). The results support that digitalisation positively influences nature of training and banking performance, but an interesting finding was establishing the mediating role of nature of training between digitalisation and banking performance. This was an additional contribution which supports that training has enriched the influence of digitalisation on banking performance. Earlier studies by [4,81] have endorsed the link between digitalisation and banking performance, but the nature of training aspect had not been considered in these studies. Additionally, the outcomes also highlighted a positive relation between banking performance and realisation of specific sustainable development goals.

6. Implications

6.1. Theoretical Implication

The present research endorsed the multi-dimensionality of digitalisation, with success that can emerge if due importance is given to all three sub-dimensions, viz., digital culture, digital technology, and digital skillsets. The success of technology could be conceivable if due importance is provided to digital culture and digital skillsets, as suggested by current research. The study validated the multi-dimensional concept of banking performance measured through balanced score card of [40]. However, it also suggested a drift from undue focus on financial perspective to other perspectives, like innovation and learning perspective and customer perspective. An important finding was the increased importance of special training along with, on-the-job and off-the-job training. This could be used by human resource department to offer special training programs along with orientation and other programs offered by banks. The lack of adequately trained and specialized staff is a serious challenge, which needs dire attention by policy makers. The paper endorsed the role of training in enhancing the influence of digitalisation on banking performance through mediation analysis [14,31]. The study highlighted the mediation especially complementary mediation, which is an added contribution [93]. The present research demonstrated from a managerial and academic perspective that, by taking a holistic approach through the interplay of digitalisation and training, there is an increased possibility of augmenting banking performance and obtaining better results for the realisation of specific sustainable development goals.

6.2. Practical Implications

In terms of practical implications, this research has several significant implications. It has practical implications for pertinent stakeholders to promote banking innovation for digital transformation of Indian banking. The study analysed the role of digitalisation in Indian context and provided a holistic view of how digitalisation with training can be vital for building a positive attitude among Indian customers and will also assist in providing a stimulus for banks to achieve sustainable growth. A due focus on linking banking performance with the realisation of sustainable development goals was suggested through the research. The Indian government's campaign for a cashless society and a digital India initiative has made digital banking solutions indispensable. The paper supports the promotion of policies to enhance adoption of digital banking and acquisition of training to use new technology for improving banking efficiency. This has been endorsed by [12,14]. This study supports and fosters the role of training [29,99] for improving efficiency of bank employees to adopt new practices. The adoption of digitalisation and enhancing its impact on banking performance and realisation of specific SDGs with increased importance to training is the emerging contribution. This study sets in motion the need to examine the challenges in digitalisation in banking and how these challenges could be overcome with right choice of training. The study does not only contribute to generate awareness about the integrated factors influencing the banking performance but also elaborates the need for strategic training to be provided to deal with the dynamic society that the banks function in. Enterprises across the globe are being pushed into increased socially responsive and environmentally sustainable strategies [4,82,94] has supported the shift to sustainable relationship management practices to enhance customer experience. This research has paved the way in this direction. The results of the current research will be of great interest to the banking community and customers due to the influence of digitalisation on banking performance and its final influence on realisation of SDG1, SDG5, and SDG8. The findings of this research should induce the managers to adopt policies to stimulate the employees through training to help them condense their reservations against the digital transformation to deliver maximum benefits to customers.

7. Limitations and Future Directions of Research

Undoubtedly, the aim of this study was successfully fulfilled, contributing several benefits for theoretical and practical implications. Nevertheless, this research was not without limitations, which may provide research direction for future studies. This study covered relation of digitalisation and training on banking performance and realisation of specific sustainable development goals. The study may focus on adding more independent variables, to examine how digitalisation in banks may be linked with nature of training. Furthermore, this study was based on North India, although it covered all the main banks, but in future, it can be extended to similar developing economies, like other parts of India. This study was based on a multistage sampling subject to certain limitations. The sample size may further be extended for better future results and to gauge the overall effectiveness of nature of training. There is a further need to undertake bank-wise analysis of training programs and analyse their impact on performance. According to [99], there is a prominent impact of the training and development programs on the performance of the banks, but there is a need to examine the impact of the training programs in both the public-sector banks and the private-sector banks on a comparative basis and provide suggestions. In future studies, the results would be examined based on bank structures to provide additional insights into the digital culture of the banks to further enhance the sustainable growth in banks to help in realising sustainable development goals [14]. Also, the future studies may incorporate the impact of digitalisation and training on the managerial and non-managerial levels of the banking sector. Further study could focus on a longitudinal survey to examine the relation among digitalisation, training, banking performance, and the realisation of sustainable development goals, and also make a comparative analysis of public- and private-sector banks.

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Data Availability Statement: The datasets generated and/or analysed during the study are available from the corresponding author upon reasonable request.

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