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Sustainable Banking : The strategic followed by Indian Private Sector Banks

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1. Introduction to Banking

The basic concept that sets banks apart from other types of financial entities is the ability to deposit and lend money. Clients of banks receive payment for their deposits either upon demand or at the end of the designated deposit period. Since deposits essentially function as bank liabilities, banks have to control them to maximize profit in a similar way to how they manage their assets, which are generated through lending. Thus, a bank's primary function is to serve as a middleman between a depositor and a borrower. Other financial organizations, such stockbrokers, stock exchanges, pooled investment funds, etc., also function as middlemen between buyers and sellers. However, taking deposits and making loans is what sets a bank apart from other financial entities (Heffernan, 2005).
Considering every borrower has an account with their specific bank, the bank has access to more information on borrowers than any other individual lender. This facilitates a bank's decision to lend money to any borrower by looking through the account holder's previous records. Banks expand their lending operations by using this information. Consequently, compared to an individual lender, banks have lower lending risks (Heffernan, 2005).

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The majority of highly rated companies have been able to obtain loans at rates significantly lower than those of banks by issuing bonds for public subscription; nonetheless, they also choose bank borrowing because it demonstrates their creditworthiness to suppliers and the financial markets. Demand for a bank's services will inevitably rise if it offers them loans at a lower interest rate (Stiglitz and Weiss, 1988).

Sustainable environmental, and social demands are all integrated in sustainable development. All three requirements, according to proponents of sustainable development, must be taken into consideration in order to ensure the well-being of present and future generations. Being a significant economic player, the financial sector could be crucial to attaining sustainable development. Schmidheiny and Zorraquin (1998) state that the industry might be able to finance change in a way that is more sustainable.

Sustainable Banking : A Conceptual Overview

According to Jeucken and Bouma (1999), sustainable banking is the choice made by a bank to limit the customers it serves to those who respect the effects it has on society and the environment. Sustainable banks are concentrated on fostering genuine economic growth and supporting businesses that provide goods and services that are socially and environmentally responsible, according to Earhart et al. (2009). Sustainable banking, according to Bouma et al. (2017), is defined as (perpetual/inexhaustible/continuous) sustainable finance that provides capital and manages risk for a range of initiatives, from small-scale businesses to large-scale projects and organizations that advance social justice, economic prosperity, and environmental protection.
Furthermore, the development of such goods and services with unique social and environmental benefits is made possible by sustainable banking. These ought to include low- income housing, agency banking, clean energy, microfinance, energy efficiency, cleaner production methods and technology, biodiversity preservation, and financial services for underserved women and youth. By entering new sectors, banks can expand their client base and raise money by offering assistance to stakeholders through the use of these products and services (Polonskaya & Babenko, 2012).

Boda & Fekete(2009) elaborate on the concept of sustainable banking and support three requirements. Recognizing and accepting the responsibility of managing revenue streams is the primary prerequisite. Developing internal policies and procedures that are responsive to ethical standards and actively align with bank operations constitutes the second phase. Restoration of the socio-ecological added value of banking activities is determined by the third requirement. These three requirements cover the relationship among using the bank's services, its corporate clients, and the staff members involved in daily operations.

2. Literature Review

The Conceptual Framework of Sustainability

Concerns over environmental degradation, climate change, poverty, social inequality, and disparities across cultures have made sustainable development a major priority in recent years. Due to the strain these concerns put on numerous national and international organizations, policy makers, practitioners, and academics, they focused their attention on all of the major sustainability issues that exist today (Giovannoni & Fabietti, 2013; KPMG, 2008 and Joseph, 2012). The requirement of sustainable development is currently acknowledged by all, but its definition and significance are not being discussed. The avoidance of all the crucial components linked to sustainability as a result of this ignorance has occurred (Gray, 2010). Because people do not realize how important sustainable development is, the concept is not applied and comprehended correctly, leading to ambiguity and unfavorable outcomes (Dixon & Fallon, 1989). The idea of sustainability has become more and more popular among the general public over time, giving rise to many discussions on the subject. These discussions first linked this strategy to corporate sustainability, ethical behavior, and environmental management. These conversations are frequently handled independently. They also have an effect on the big corporations by casting doubt on their commitment to sustainable development.

Over time, these firms have been under increasing criticism from society and various local and international regulations. They are compelled to incorporate the established social and environmental principles into their management, structures, and tactics as a result of this pressure (Werbach, 2009). As a result, the firms' mindsets progressively shift to include sustainability in their mission statements, internal codes, and reporting systems. This aids in the restoration of certain enterprises' damaged reputations in the community, although some businesses may not have actively integrated the idea of sustainable development into their day- to-day operations (Gond et al., 2012). These organizations would need to alter their current policies and procedures in order to actually achieve sustainable development, as well as make very important decisions about how to proceed (Hopwood, 2009).

3. Research Methodology

Objectives of the research

Examining the idea of sustainable banking in India empirically is the study's main goal. The goal can be further broken down into the following four goals:

- To research the idea of sustainable banking and the factors that influence it.
- To use structural equation modeling (SEM) to determine the relationships between the different aspects of sustainable banking concerning Indian banks.
- To make recommendations for tactics for Indi's sustainable banking framework

Research Approach

Empirical assessment of sustainable banking model by using survey method.

The primary data is collected by using predetermined, structured and undisguised questionnaire. The data collected in this phase is subjected to SEM technique for the validation of proposed sustainable banking model of Indian banks.

Research Design

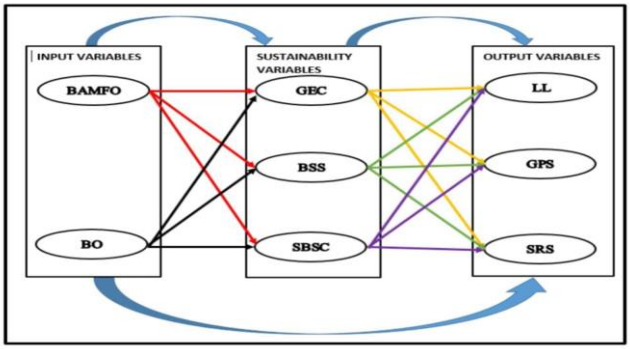
The study uses a descriptive research design which is based on a single cross-sectional design to validate the data and further refine the list of variables. In the case of a cross-sectional design, the information is collected from any given sample of population element only once. This type of design is also called a sample survey research design (Malhotra, 2007).

The data was collected from top-level management (General Managers, Deputy General Managers, Assistant General Managers, Principal Officers, etc.) of commercial public sector, private sector, and foreign private sector banks operating in India, regarding their perceptions and approach for sustainable banking in India. The instrument used for collecting the data was a structured questionnaire designed on the basis of available literature and feedback from experts in the focus group.

Then, using the Statistical Package for Social Sciences (SPSS) Version 22.0, the acquired data is examined. In order to represent the data in terms of a small number of underlying variables
or dimensions and to examine the interactions between sets of related variables, exploratory factor analysis, or EFA, is performed (Malhotra, 2007). Oneway ANOVA is also used to compute descriptive statistical analysis of the variables in order to look at mean score differences on various organizational and demographic traits of the respondents.

Conceptual Model

All the identified variables of sustainable banking are interrelated by drawing the conceptual model which is depicted in figure below.



For better understanding, this conceptual model is divided into four sections. Each section is named separately as A, B, C, and D respectively. Each of them has been discussed in detail as follows:

Section A: In section A, the impact of input variables is measured on sustainability variables. In this section input variables which are considered as independent variables includes BAMFO and BO. On the other hand, sustainability variables which are dependent variables include GEC, BSS, and SBSC.

Section B: In section B, the impact of sustainability variables on output variables is measured. In this section, sustainability variables are considered independent variables and include GEC,
BSS, and SBSC. On the other hand, output variables are taken as dependent variables and include LL, GPS, and SRS.

Section C: In section C, the impact of input variables is measured on output variables. Here, the input variables remain the same as those considered in section 'A' above and output variables are also the same as those considered in section 'B' above.

Section D: In section D also the impact of input variables is measured on output variables through sustainability variables. Here, the sustainability variables are taken as mediating variables and the impact of input variables is measured on output variables through mediating (sustainability) variables.

5. Analysis Plan

Data analysis begins with an illustration of the profile of the respondents and responding banks. This is followed by an estimation of response rate, non-response bias, and response bias. To explore the structure of the questionnaire, Exploratory Factor Analysis (EFA) was used and Confirmatory Factor Analysis (CFA) was used to confirm the structure through SPSS 22 and AMOS 20 statistical packages. Thereafter, Structural Equation Modeling (SEM) was deployed using Maximum Likelihood Estimation (MLE). SEM is a two steps model. In the first step measurement model is estimated by referring to the relationships among the latent and observed variables and in the second step structural model is estimated by determining linkages among the different latent variables (Anderson & Gerbing, 1988; Bollen, 1993)

The measurement model assesses each construct's unidimensionality, validity, and reliability, whereas the structural model estimates the relationship between exogenous (independent) and endogenous (dependent) variables. Every construct has its own set of measurement models, which are subsequently estimated using the structural model (Joreskog & Sorbom, 1996). Testing the structural model wouldn't matter unless it was assumed beforehand what the measurement model contained. The proposed theory cannot be evaluated if the parameters selected to measure a particular dimension are unsatisfactory (Anderson & Gerbing, 1991). As a result, each construct's measurement model was evaluated before the structural model. The measurement model was estimated using the application of Confirmatory Factor Analysis (CFA). The reliability and unidimensionality of the scales were evaluated.

After this analysis, the remaining items of measurement are then checked for convergent and discriminant validity. After validating the measurement model, the researcher proceeded for the second step of estimating the structural relationships among the latent variables of the

research model. The research hypotheses were tested with the estimation of the standardized path coefficients of the structural model.

Exploratory Factor Analysis

Exploratory Factor Analysis is used to compress the information of all the eleven original factors into a small set of factors (variables) with the minimal loss of information (Hair et al., 2006). This is done to have a more parsimonious conceptual understanding about the set of measured factors. Since the goal was data condensation, initially, Principal Components Analysis (PCA) was run using the dimension reduction function in SPSS Version 22.0.

Before extracting the factors, some tests are run to check the adequacy and appropriateness of data for conducting factor analysis. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity are used to determine the appropriateness of applying factor analysis for data reduction and to examine the presence of correlations among the factors.

The KMO index ranges from 0 to 1, with values above 0.50 indicating the fitness of the data for factor analysis. It is used to quantify the degree of inter-correlations among the factors and to check whether the factors are interrelated and share common underlying dimensions. If the value tends towards 0, it reveals dissemination in the pattern of correlations and making it unlikely that the variables will form distinct factors, thus rendering the data unsuitable for factor analysis (Hutcheson & Sofroniou, 1999). Conversely, as the value approaches 1 it shows

that the patterns of correlations are comparatively more compact and makes the data more amenable to yielding specific and reliable factors

Kaiser (1974) has suggested how the KMO statistics may be interpreted as shown in Table 5.5 below.

Table: KMO Statistics

KMO Statistic	Interpretation
In the .90s	Marvellous
In the .80s	Meritorious
In the .70s	Middling
In the .60s	Mediocre
In the .50s	Miserable
Below .50	Unacceptable

Another measure of how strongly the elements are related is the Bartlett's Test of Sphericity. It is used to test the null hypothesis, which states that the competences are not necessary for the population and that the original correlation matrix is an identity matrix.

The significant result will reject the null hypothesis and show that there exist some relationships among the variables and thus confirms the appropriateness of applying factor analysis.

Table :KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.76
Bartlett's Test of Sphericity	Approx. Chi-Square	3414.36
	df	561
	Sig.	.000

The data for this study is collected from 307 banks. For this, information was gathered from 307 banks. The KMO index value of 0.76, which is in the "middling" range as indicated in Table 5.6 above, amply demonstrates that the data sample is appropriate for factor analysis. Bartlett's Test yields very significant results ($p<.001$) for the provided data, confirming the presence of correlations among the competences and the suitability of factor analysis.

To check the number of factors that are to be extracted, eigen values are examined. This approach is called the latent root criterion where only factors with eigen values greater than 1.0 are retained; the other factors are excluded from the model (Malhotra, 2011). 10 factors or dimensions that explained the major proportion of the variance (62.60percent) emerged. However, on closer examination, the groupings in the Rotated

Component Matrix appeared to be random rather than having a theoretically plausible explanation. Thus, they can stop the extraction process when the desired number of factors has been extracted (Hair, et al., 2006). A ten-factor solution was forced using Principal Component Analysis (PCA) with Varimax rotation. The ten factors extracted explained 62.60 percent of the total variance (Table)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative percent	Total	% of Variance	Cumulative percent
1	5.99	17.62	17.62	5.99	17.62	17.62
2	2.84	8.36	25.98	2.84	8.36	25.98
3	2.63	7.76	33.74	2.63	7.76	33.74
4	1.99	5.86	39.61	1.99	5.86	39.61
5	1.60	4.70	44.31	1.60	4.70	44.31
6	1.50	4.42	48.73	1.50	4.42	48.73
7	1.33	3.92	52.66	1.33	3.92	52.66
8	1.22	3.60	56.26	1.22	3.60	56.26
9	1.11	3.26	59.53	1.11	3.26	59.53
10	1.04	3.07	62.60	1.04	3.07	62.60
Extraction Method: Principal Component Analysis						

Note: Only the 10 factors generated in EFA are depicted

Scale reduction is conducted by using an iterative process and removing those items whose factor loadings were less than .40 (Ford et al., 1986). The rotation caused 11 items to be dropped and 34 to be retained. Tables 5.8 shows the Rotated Component Matrix with final factor loading using the PCA approach.

S. No.	Items	Factor Loading	S. No.	Items	Factor Loading
1.	S1D1	.702	18.	S5D4	.554
2.	S2D1	.757	19.	S1D6	.560
3.	S3D1	-.596	20.	S4D6	.539
4.	S4D1	.622	21.	S5D6	.671
5.	S1D2	.742	22.	S6D6	.645
6.	S2D2	.548	23.	S1D7	.785
7.	S3D2	.810	24.	S2D7	.769
8.	S4D2	.707	25.	S4D7	.727
9.	S5D2	.761	26.	S1D8	.769
10.	S1D3	.647	27.	S2D8	.715
11.	S2D3	.684	28.	S3D8	.685
12.	S3D3	.724	29.	S4D8	.436
13.	S6D3	.741	30.	S1D9	.690
14.	S1D4	.560	31.	S2D9	.584
15.	S2D4	.822	32.	S3D9	.524
16.	S3D4	.761	33.	S4D9	.798
17.	S4D4	.590	34.	S5D9	.508

Confirmatory Factor Analysis (CFA)

Identification of model: As shown in table 1, the estimation of the hypothesized model resulted in an overall chi-square value of 1386.445 with 499 (595-96) degrees of freedom and the probability value of .000. This is important as it indicates that the minimum was achieved and the software (AMOS) successfully estimated all the parameters resulting in a convergent solution (Byrne, B. M., 2016).

Table : Notes for Model (Default model)

Computation of degrees of freedom (Default model)	
Number of distinct sample moments:	595
Number of distinct parameters to be estimated:	96
Degrees of freedom (595 - 96):	499
Result (Default model)	
Minimum was achieved	
Chi-square = 1386.445	
Degrees of freedom = 499	
Probability level = .000	

Method: Interval data with a sample size of 307 from the several available CFA running techniques provide the data for this investigation. The Maximum Likelihood Estimation (MLE) (Dempster et al., 1977) is used in this investigation since it works well with continuous data and small

sample sizes. Additionally, Ullman (2006) examined the various approaches and determined how well they conformed to various dataset types. Among these is Browne's (1974) Generalized Least Square (GLS), which is thought to be appropriate for data with similar features to MLE. However, since the data in this instance is normal, GLS is not applicable.

In contrast to this study, Browne (1974, 1984) proposed an alternative method called Asymptotically Distribution Free (ADF) if the data is huge. Without very large sample numbers, this strategy is imprecise and unfeasible when dealing with numerous variables. The data has to be measured on normalcy indices prior to doing MLE. **Fit-indices:** Besides chi-square goodness-of-fit test, there are other accompanying fit indices such as Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI) (Joreskog, & Sorbom 1986), Comparative Fit Index (CFI) (Bentler, 1990), and Root Mean Square Error of Approximation (RMSEA) (Hooper et al., 2008). The GFI measures the proportionate amount of variance and covariance in simple data which is jointly elaborated by sigma. On the other hand, the AGFI adjusts the number of degrees of freedom in the stated model. The values of these indices lie in between zero to one, whereby the value nearer to one indicates the good fit. In this model, the values of GFI and AGFI are found to be .801 and .763 respectively which are quite less than what is recommended. The value of CMIN/DF also falls within the recommended limit which states that the value should be less than 3. The CFI checks the fit analogous to other models by using the approach based on the non-central $\chi 2$ distribution with

the non-centrality parameter. In the case of CFI, the values more than .95 are considered as the indication of good fitness of the model (Hu & Bentler, 1999). In this particular case, the value of CFI is much smaller then what is recommended but lies within acceptable limits at .704. The RMSEA considers the error of approximation in the population and put up the question "How well would the model, with unknown but optimally chosen parameter values, fit the population covariance matrix if it were available?" (Browne & Cudeck, 1993). The RMSEA is found to be .076, which is quite less than .1 and hence falls in the acceptable limits.

Fit-indices	Recommended	Observed
CMIN/DF	<3	2.778
GFI	>.9	.801
AGFI	>.9	.763
CFI	>.95	.704
RMSEA	<.1	.076

CONCLUSIONS AND RECOMMENDATIONS

The conclusions of the analysis conducted are presented in this chapter.

In addition, suggestions are put forth in light of the study's findings. After outlining some of the study's shortcomings, there is a detailed discussion of the management, academic, and research directions that follow.

Findings and Conclusions

Analyzing the problems and difficulties associated with sustainable banking in India is the goal of this study. Five main sections make up the study. The effect of input variables on sustainability variables is examined in the first section; the effect of sustainability variables on output variables is evaluated in the second section; and the impact of input variables on output variables is attempted to be determined in the third section. A sustainable banking model is put forth using interpretive structural modeling in the fifth part, while sustainability factors are viewed as mediator variables between independent and dependent variables in the fourth. A research instrument based on the study constructs has been designed to gather primary data following a thorough evaluation of the literature. An analysis of the gathered data is conducted with AMOS (20.0) and SPSS (22.0). Below is a discussion of the findings' conclusions.

Findings based on hypotheses testing

Simultaneous testing was done on four structural models. The first model measures the effect of input factors (BAMFO and BO) on sustainability variables (GEC, BSS, and SBSC). The second model measures the impact of sustainability factors (LL, GPS, and SRS) on output variables (BSS, SBSC, and GEC). In the fourth model, the influence of input variables on output variables is assessed using sustainability variables (GEC, BSS, and SBSC) as mediating variables. In the third model, the impact of input variables (BAMFO and BO) is quantified directly on output variables (LL, GPS, and SRS).

BIBLIOGRAPHY

1. Administrators, C. S. (2010). CSA Staff Notice 51-333: Environmental Reporting Guidance. Canadian,Securities, Administration, Montreal.
2. Alapati, V., & Rao, S.K. (2013). Banking innovation for an eco-friendly environment: a new trend of lean and green management. Journal of International Academic Research for Multidisciplinary, Vol. 1 No. 6, 400-421
3. Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. Psychological bulletin, 103(3), 411.
4. Anderson, J. C., & Gerbing, D. W. (1991). Predicting the performance of measures in a confirmatory factor analysis with a pretest assessment of their substantive validities. Journal of applied psychology, 76(5), 732.
5. Anurag. (2007). RBI asks Indian banks to promote sustainable development - Banknet India. Retrieved from http://www.banknetindia.com/banking/sustain.htm on August, 11, 2017.
6. Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. Journal of marketing research, 396-402.
7. Arnsperger, C. (2014). Social and Sustainable Banking and the Green Economy project Part I: A Hypothetical Diachronic Scenario. In Paper for the 2014 Annual Conference of the Society for the Advancement of Socio-Economics (SASE).
8. Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. Journal of the academy of marketing science, 16(1), 74-94.
9. Barkemeyer, R., Holt, D., Preuss, L., & Tsang, S. (2014). What happened to the 'development' in sustainable development? Business guidelines two decades after Brundtland. Sustainable development, 22(1), 15-32.
10. Barros, V. R., Field, C. B., Dokke, D. J., Mastrandrea, M. D., Mach, K. J., Bilir, T. E., ... & Girma, B. (2014). Climate change 2014: impacts, adaptation, and vulnerabilityPart B: regional aspects-Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.
11. Bartholomew, D. J. (1996). The statistical approach to social measurement. Academic Press. Bender, D. H. (1957). Colored stationery in direct-mail advertising. Journal of Applied Psychology, 41(3), 161.
12. Bentler, P. M. (1990). Comparative fit indexes in structural models. Psychological bulletin, 107(2), 238.
13. Berry, M. A., & Rondinelli, D. A. (1998). Proactive corporate environmental management: A new industrial revolution. Academy of Management Perspectives, 12(2), 38-50.
14. Warfield, J. N. (1974). Toward interpretation of complex structural models. *IEEE Transactions on Systems, Man, and Cybernetics*, (5), 405-417.
15. WCED (World Commission on Environment and Development), B. C. (1987). Our common future. Report of the world commission on environment and development.
16. Weber Olaf (2010). "Social Banking: Products and Services" Available on http://ssrn.Com/paper=1621822.
17. Weber, O. (2012). Sustainable banking–History and current developments. Weber, O., & Feltmate, B. (2016). *Sustainable banking: Managing the social and*
18. *environmental impact of financial institutions*. University of Toronto Press.
19. Weber, O., & Remer, S. (2011). *Social banks and the future of sustainable finance*. Routledge.
20. Werbach, A. (2009). Strategy for sustainability: A business manifesto. Harvard Business Press.
21. Werts, C. E., Linn, R. L., & Jöreskog, K. G. (1974). Intraclass reliability estimates: Testing structural assumptions. Educational and Psychological measurement, 34(1), 25-33.
22. Westpac's Approach to Sustainable Finance. (2018, May). Retrieved from: https://www.westpac.com.au/docs/pdf/aw/sustainability/Position_statement_on_sustai nable_finance.pdf
23. Winn, M., Pinkse, J., & Illge, L. (2012). Case studies on trade-offs in corporate sustainability.
24. *Corporate Social Responsibility and Environmental Management*, *19*(2), 63-68. Wood, S., & Richardson, B. J. (2006). Environmental law for sustainability.
25. Wright, K. B. (2005). Researching Internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services. *Journal of computer-mediated communication*, *10*(3), JCMC1034.
26. Yadav, R., & Pathak, G. S. (2014). Environmental sustainability through green banking: A study on private and public sector banks in India.
27. Yammarino, F. J., Skinner, S. J., & Childers, T. L. (1991). Understanding mail survey response behavior a meta-analysis. Public Opinion Quarterly, 55(4), 613-639.
28. Zadek, S., & Chenghui, Z. (2014). Greening China's financial system. An initial exploration'.
29. *International Institute for Sustainable Development*.
30. Zadek, S., and N. Robins. (2015) *Aligning the financial system with sustainable development.* Geneva, Switzerland: UNEP, 2015.
31. Zimmermann, W., & Mayer, B. (2001). Banks and environmental practices in Bangkok Metropolitan Region: the need for change. In Sustainable Banking: The Greening of Finance (pp. 133-146). Greenleaf publishing.