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Impact of Intangibles on Bank's Performance

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ABSTRACT

Despite increasing attention paid to intangibles research since the end of the 20th century, there is a dearth of empirical evidence on the interactions among different intangible elements and their performance implications due to the lack of appropriate intangible measurements and the low level of intangible disclosure in the public domain. This paper seeks to investigate the role of intangibles in the Indian banking by studying 46 banks, seven years (2005-2011) quantitative data. The empirical results show that top management human capital (HC) has a positive impact on either customer relationships or bank financial performance, and the combination of different intangible elements tends to better explain the variation in banks' return on assets than they do individually. They also depict a positive relationship between relational capital and banks performance. Hence it is advisable for banks to build up on their intangible assets to gain competitive advantage and distinguish themselves from competitors in a world where in the hunt for market share firms are resorting to copying tangible assets and capabilities possessed by others to beat each other.

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Introduction

The past several decades witnessed the increasing importance of intangibles. The world economy has moved from an industrial economy to a knowledge-driven economy, and wealth and growth are now "driven primarily by intangible (intellectual) assets" (Lev, 2001, p. 1). Bontis et al. (1999) argue that in such an information age, "products and companies live and die on information and the most successful companies are the ones who use their intangible assets better and faster" (Bontis et al., 1999, p. 392). One school of the literature looks at intangibles through a resource-based view (RBV). The basic point of the RBV is that a firm's competitive advantage derives from its special resources that are valuable, rare, imperfectly imitable, and non-substitutable (Barney, 1991). These resources can be either tangible (e.g., plant, equipment, and land) or intangible (e.g., patents, copyright, databases, human capital, customer relations and reputation). Although tangible assets can be valuable for a firm, they are transparent and relatively easily duplicated (Clulow et al., 2003; Fahy, 2000). On the other hand, many researchers argue that a firm's sustainable competitive advantage mainly results from its intangible resources.

Given the fact that banks are important to the world economy, it is of interest to explore the value creation process in banking, and thus to search for ways of improving bank strategies and performance.. It is expected that this paper can contribute to the extant literature and knowledge in several ways. First of all this paper is expected to make a contribution to the methodological development in the fields of management, accounting and finance research by providing a practical example of how quantitative and qualitative approaches can be combined and integrated to investigate the same phenomenon. Secondly this paper aims at improving our understandings of intangibles in terms of their measurement, reporting, and modelling. It will contribute to the knowledge of intangibles by investigating the brands-customer relationships association and the impact of employee level human capital on firm

performance, which appear to be ignored by previous studies. Lastly this paper can improve our understanding of the bank business model by providing a grounded theory model of the role of intangibles in the bank value creation process. It will show how knowledge-based resources combining with tangible and financial resources provides the means to improve the financial and information intermediation processes as well as risk management in banking.

Reviews of Literature

During last few years' researchers have begun to understand the relationship between Intellectual Capital and Bank performance, with the preliminary work being conducted in Malaysia (Baker & Yusop, 2012 ; Muhammad & Ismail, 2009); UK (EI- Bannany, 2008); Portugal (Cabrita & Bontis, 2008); Thailand (Saengchan, 2008; Appuhami 2007) Romania (Ketikidis, Lazuras & Bulata, 2009); Taiwan (Wang, 2011); Italy (Puntillo, 2009); Bangladesh (Khan & Ali, 2011); Pakistan (Khalique, Shaari & Isa, 2012; Ali & Ali, 2011; Bharathi, 2010); Hong Kong (Chu, Yu, Ng, Wong & Chan, 2011); China (Zou & Huan, 2011) and India (Ahuja & Ahuja, 2012). Most of the study indicates that Intellectual capital includes all employees, organizational knowledge and their abilities to create value added and led to sustainable competitive advantage, which depends on how efficient the firm is in building sharing, leveraging and using its knowledge. Intellectual capital has been identified as a set of intangibles (resources, capabilities and competences) that drives the organizational performance and value creation (Bontis, 1998). This suggests causal relationships between intellectual capital and organizational value creation. At least three elements are common in almost all definitions: (i) intangibility; (ii) knowledge that creates value and; (iii) effect of collective practice (Cabrita, 2005)

Durst (2012), conducted a research titled Reporting on intangibles-related risks: An exploratory study of intangibles risk disclosure in annual reports of banking companies from the UK, US, Germany and Italy with the objective to examine

intangibles-related risk reporting in a sample of 16 leading banks from the United States (US), United Kingdom (UK), Germany and Italy. The sample used in our study comprised of 16 banks from the US, UK, Germany and Italy. The study concluded stating that intangibles risk reporting is limited to a certain range of salient intangibles while other intangibles (the more subtle ones) which could also lead to serious challenges within the firms, such as those related to knowledge transfer, changes, succession, dependency on key staff, are undervalued respectively not reported. Banks follow a certain pattern that could be named a passive approach, suggesting that the banks analyzed are more or less trying to comply with Basel II and their expose to operational risks or national regulations.

Gigante and Previati (2011), in the paper titled **A knowledge oriented approach to the investigation of Italian banks performances** provided a description of the present role of intellectual capital (IC) in the Italian Banking Sector. Giving as output a ranking representation of the banks involved in the analysis in terms of their efficient use of tangible and intangible assets in the creation of corporate value. Quantitative Research was carried out measure Intellectual Capital in various banks. The study concluded stating that investors may place different values on each of the three components of value creation efficiency (physical capital, human capital, and structural capital).

González-Pedraz and Mayordomo (2011), undertook a research titled **Trademark activity and the market performance of U.S. commercial banks** with the objective to analyze the effect of trademark activity on the market value and performance of U.S. commercial banks from two perspectives. First is a long-term perspective considers the effect of such activity on banks' Tobin's q. Second is a short-term perspective, analyzing the effect of trademark activity on banks' abnormal returns. The study concluded stating that maintaining a relatively young stock of trademarks seems to be beneficial. In the short run, the market perceives trademark introductions positively, leading to significant positive abnormal returns. Efficient portfolio management requires that the trademark activity is above the optimal level which guarantees that increases in the stock of trademarks above this level improve bank performance. This optimal level should be reached with new focused trademarks and should be accompanied by the cancellation of old and non-focused trademarks. Such cancellations not only improve performance but also imply savings for the bank, because it is costly to maintain trademarks.

Bundi (2010), carried a research titled **Human capital management practices and firms performance: A survey of commercial banks in Kenya** with the objective to determine the relationship between human capital management (HCM) practices and performance of commercial banks in Kenya. The study concluded stating that most commercial banks adopt human capital management practices to an average degree. The study further concludes that human capital management practices generally have a positive influence on performance as measured by both turnover growth and return on assets. The study recommends that there is need for commercial banks in Kenya to enhance the human capital management practices.

Titko and Lace (2010), in the research titled **Performance measures for a business unit in Latvian retail banking** determined the most appropriate operating objectives and target measures for the bank's customer service centre. The study concluded stating that to succeed in value enhancing strategy

execution, it is extremely important to align performance targets with the overarching goal. The most popular performance evaluation system is Balanced Scorecard, developed by D. Norton and R. Kaplan. Considering the survey data and the experience of successful BSC adopters, the authors developed the objective tree with quantitative metrics for the customer service center of a retail bank. This model can be used as a framework for constructing the performance evaluation system for business groups in Latvian commercial banks.

Oliver and Fumás (2010), conducted a study titled **I.T. investment and intangibles: Evidence from banks** with the objective of modeling the investment behaviour of a multi-asset firm with market power that accumulates valuable intangible assets to complement the IT capital. The study concluded stating that investment in IT does not necessarily lead to a competitive advantage for the bank. The theory presented in this paper indicates that, if the assets invested by the firm satisfy the value-maximization conditions, then the market value is expected to be equal to the sum of the replacement cost of all the productive assets, plus the rents from market power.

Dave and Bhatt (2009), in the research paper titled **Incorporating intangible aspects in performance evaluation of Indian banks** tried to evaluate the significance of intangible aspects as a tool for performance measurement in the Indian banking sector. The study concluded stating that though it is difficult to build a single BSC for a bank, it emerges to be an efficient and all inclusive tool, encompassing various organizational aspects. With the financial reforms in full swing, and influx of private sector and multinational banks into the economy, it is necessary for the banks to adopt such a system of performance measurement if they aim at designing business strategy that ensures better performance in future. The fact that the RBI has initiated the process to collect data pertaining to many different performance indicators over the past decade can be considered to be a good progress in this direction.

Ellis (2009), undertook a research titled **Maximizing intellectual property and intangible assets** with the objective to address the primary issues in intangible asset (IA) finance facing financial firms and companies alike by profiling successfully structured and completed IA debt-and-equity deals. The study concluded stating that there is a place for intangible asset (IA) investments in the capital allocation process, even if it is not yet mature. Today's most promising companies are built on intangible assets. This new wave of business growth requires the finance community to develop the robust financial products to fund these companies.

Research Methodology Objectives of the Study

1. To understand the concept of intangibles wrt banking industry.
2. To investigate the inter-relationship between the various intangible assets i.e. the human capital and relational capital variables.
3. To investigate the relationship between intangible assets and bank's performance.

Hypotheses

Hypothesis 1 (H₁): Bank's brand will positively affect its customer relationships.

Hypothesis 2 (H₂): Bank's human capital (HC) will positively affect its customer relationships.

Hypothesis 3 (H₃): Bank's human capital will positively affect its performance.

Table 1: Descriptive Statistics

Human Capital and Service Quality							
Variables	N	Minimum	Maximum	Mean	SD	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	S.E
LNCEOEX	37	-0.693	3.689	1.207	1.099	0.615	0.39
LNCEOP	25	2.996	3.664	3.443	0.171	-1.411	0.46
CEOIN	33	0	42	34.439	7.597	-3.297	0.41
CEOED	34	2	8	4.35	1.368	0.517	0.4
LNNSC	46	-0.182	12.268	8.78	2.079	-2.141	0.35
LNPEB	42	2.016	3.718	2.583	0.376	1.188	0.37
Relational Capital							
LNB	42	4.302	9.291	6.676	1.15	-0.308	0.37
ADVA	46	0	9525.46	446.324	1443.093	5.864	0.35
ADMA	46	1.229	92427.5	9941.7	16237.08	3.687	0.35
BVA	19	144	5179	675.11	1167.112	3.614	0.52
BR	29	5	8	7.28	0.797	-1.01	0.43
LNAGE	44	2.303	4.997	4.122	0.69	-1.257	0.36
CR	46	-1.56	3.99	1.345	0.908	-0.242	0.35
Financial Performance and Control Variables							
LNASSETS	46	4.0143	15.8745	12.619	2.059611	-1.902	0.35
ROA	45	-0.0248	0.0146	0.00772	0.006374	-3.455	0.35
Tobin's Q	46	0	0.8719	0.15133	0.151688	2.85	0.35

Note: S.D = Standard Deviation; S.E= Standard Error.

Source: Secondary data

Table 2: Correlation between Human Capital and Service Quality variables

		LNCEOEX	LNCEOP	CEOIN	CEOED	LNNSC	LNPEB
LNCEOEX	PC	1	-.701**	0.084	0.039	0.211	.442*
	Sig. (2-tailed)		0	0.65	0.834	0.21	0.006
	N	37	25	32	32	37	37
LNCEOP	PC	-.701**	1	.538**	0.043	0.034	-.492*
	Sig. (2-tailed)	0		0.006	0.853	0.871	0.012
	N	25	25	25	21	25	25
CEOIN	PC	0.084	.538**	1	0.057	0.009	0.046
	Sig. (2-tailed)	0.65	0.006		0.772	0.962	0.798
	N	32	25	33	28	33	33
CEOED	PC	0.039	0.043	0.057	1	0.105	0.117
	Sig. (2-tailed)	0.834	0.853	0.772		0.553	0.512
	N	32	21	28	34	34	34
LNNSC	PC	0.211	0.034	0.009	0.105	1	.329*
	Sig. (2-tailed)	0.21	0.871	0.962	0.553		0.034
	N	37	25	33	34	46	42
LNPEB	PC	.442**	-.492*	0.046	0.117	.329*	1
	Sig. (2-tailed)	0.006	0.012	0.798	0.512	0.034	
	N	37	25	33	34	42	42

Note: **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed). PC – Pearson Correlation;

Source: Secondary data

Table 3: Correlations of Relational Capital variables

		LNB	ADVA	ADME	BVA(INR)	BR	CR	LNAGE
LNB	PC	1	0.166	.543**	.466**	.534**	0.273	.344*
	Sig. (2-tailed)		0.294	0	0.002	0.003	0.081	0.026
	N	42	42	42	41	29	42	42
ADVA	PC	0.166	1	.623**	.467**	0.222	-0.05	-.323*
	Sig. (2-tailed)	0.294		0	0.001	0.247	0.722	0.033
	N	42	46	46	45	29	46	44
ADME	PC	.543**	.623**	1	.944**	.419*	0.062	-0.141
	Sig. (2-tailed)	0	0		0	0.024	0.683	0.36
	N	42	46	46	45	29	46	44
BVA(INR)	PC	.466**	.467**	.944**	1	0.307	0.082	-0.097
	Sig. (2-tailed)	0.002	0.001	0		0.106	0.593	0.537
	N	41	45	45	45	29	45	43
BR	PC	.534**	0.222	.419*	0.307	1	0.226	-0.056
	Sig. (2-tailed)	0.003	0.247	0.024	0.106		0.239	0.771
	N	29	29	29	29	29	29	29
CR	PC	0.273	-0.054	0.062	0.082	0.226	1	0.102
	Sig. (2-tailed)	0.081	0.722	0.683	0.593	0.239		0.509
	N	42	46	46	45	29	46	44
LNAGE	PC	.344*	-.323*	-0.141	-0.097	-0.06	0.102	1
	Sig. (2-tailed)	0.026	0.033	0.36	0.537	0.771	0.509	
	N	42	44	44	43	29	44	44

Note: **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed). PC – Pearson Correlation;

Source: Secondary data

Table 4: Correlation analysis of Financial Performance and Control variables

		LNASSETS	ROA	Tobin's Q
LNASSETS	Pearson Correlation	1	.440**	0.222
	Sig. (2-tailed)		0.002	0.139
	N	46	45	46
ROA	Pearson Correlation	.440**	1	0.096
	Sig. (2-tailed)	0.002		0.529
	N	45	45	45
Tobin's Q	Pearson Correlation	0.222	0.096	1
	Sig. (2-tailed)	0.139	0.529	
	N	46	45	46

Note: **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

Source: Secondary data

Table 5: Models Summary

Model	R	R Square	Adjusted R Square	S.E. of the Estimate	Durbin-Watson
1	0.540	0.492	0.180	0.211	1.829
2	0.795	0.732	0.131	0.198	2.770
3A	0.617	0.580	0.115	0.003	2.161
3B	0.990	0.981	0.073	0.215	2.059
3C	0.966	0.933	0.005	0.031	1.775
4A	0.436	0.390	0.078	0.004	1.729
4B	0.961	0.924	0.113	0.392	1.965
4C	0.711	0.705	0.136	0.116	1.831
5A	0.825	0.780	0.060	0.003	2.082
5B	0.992	0.984	0.068	0.234	2.430
5C	0.978	0.956	0.112	0.030	1.708

Table 6: ANOVA Table

Model	1	2	3A	3B	3C	4A	4B	4C	5A	5B	5C
F	13.606	12.097	1.123	12.708	32.590	14.434	8.354	7.342	11.2.34	6.244	9.723
Sig.	0.032	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.000

Source: Secondary data

Table 7: Coefficients for Relational Capital variables

Model	UC		SC	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	.147	.545		.269	.789
	ADVA	.000	.000	-.284	-1.637	.110
	ADME	.004	.002	.285	2.010	.052
	LNAGE	.350	.130	.422	2.694	.010
	LNB	-.120	.046	-.505	-2.616	.013
	BVA(INR)	0.032	.000	.469	2.281	.028
	BR	.030	.037	.120	.810	.423

Note: a. Dependent Variable: CR; UC = Un-standardized Coefficient, SC = Standardized Coefficient

Source: Secondary data

Table 8: Coefficients of human capital variables

Model	UC		SC	T	Sig.	
	B	Std. Error	Beta			
2	(Constant)	7.155	6.194		1.155	0.27
	LNB	0.985	1.308	1.854	0.753	0.47
	ADVA	0	0	-0.34	-0.76	0.47
	LNAGE	0.215	0.454	0.245	0.473	0.65
	LNCEOEX	-0.21	0.369	-0.27	-0.58	0.57
	LNCEOPE	-0.47	2.802	-0.14	-0.17	0.87
	CEOIN	-1.94	2.683	-0.33	-0.72	0.49
	CEOED	-0.22	0.108	-0.42	-2.05	0.07
	LNESC	-0.66	1.121	-1.4	-0.59	0.57
	LNPEB	1.02	1.135	0.616	0.898	0.39

Note: a. Dependent Variable: CR; UC = Un-standardized Coefficient, SC = Standardized Coefficient

Source: Secondary data

Table 9: Coefficients of human capital for bank performance

Model	UC		SC	t	Sig.	
	B	Std. Error	Beta			
3A	(Constant)	0.006	0.033		0.185	0.856
	LNSC	0.000	0.001	0.150	0.570	0.578
	LNEPB	0.003	0.003	0.389	1.207	0.247
	LNCEOEX	0.000	0.002	0.101	0.229	0.822
	LNCEOP	-0.002	0.011	-0.106	-0.174	0.864
	CEOIN	0.000	0.000	-0.138	-0.354	0.729
3B	(Constant)	-1.320	2.277		-0.580	0.571
	LNSC	0.901	0.047	0.883	19.181	0.000
	LNEPB	0.687	0.200	0.193	3.437	0.004
	LNCEOEX	0.163	0.131	0.096	1.245	0.233
	LNCEOP	1.249	0.786	0.170	1.588	0.135
	CEOIN	-0.007	0.026	-0.018	-0.270	0.791
3C	(Constant)	0.050	0.332		0.150	0.883
	LNSC	-0.014	0.007	-0.179	-2.068	0.058
	LNEPB	0.228	0.029	0.829	7.846	0.000
	LNCEOEX	0.000	0.019	0.003	0.024	0.981
	LNCEOP	-0.164	0.115	-0.288	-1.436	0.173
	CEOIN	0.007	0.004	0.235	1.828	0.089
	CEOED	-0.009	0.006	-0.098	-1.320	0.208

Note: a. Dependent Variable: ROA, LNASSETS & TOBIN Q; UC = Un-standardized Coefficient, SC = Standardized Coefficient

Table 10: Coefficients of relational capital variables for bank performance

Model	UC		SC	T	Sig.	
	B	Std. Error	Beta			
4A	(Constant)	0.002	0.005		0.480	0.634
	LNB	0.000	0.001	0.136	0.606	0.548
	ADME	2.110	0.000	0.089	0.361	0.720
	CR	-0.002	0.001	-0.366	-2.331	0.025
	LNAGE	0.001	0.001	0.209	1.087	0.284
	ADVA	3.290	0.000	0.125	0.611	0.545
4B	(Constant)	8.602	0.495		17.390	0.000
	LNB	1.171	0.079	1.012	14.753	0.000
	ADME	-7.473	0.000	-0.009	-0.124	0.902
	CR	-0.006	0.083	-0.003	-0.067	0.947
	LNAGE	-0.802	0.123	-0.385	-6.534	0.000
	ADVA	4.385	0.000	0.050	0.791	0.434
4C	(Constant)	0.760	0.146		5.201	0.000
	LNB	-0.002	0.023	-0.015	-0.083	0.934
	ADME	7.957	0.000	0.086	0.447	0.657
	CR	0.008	0.024	0.040	0.326	0.746
	LNAGE	-0.148	0.036	-0.613	-4.083	0.000
	ADVA	1.430	0.000	0.140	0.873	0.388

Note: a. Dependent Variable: ROA, LNASSETS & TOBIN Q; UC = Un-standardized Coefficient, SC = Standardized Coefficient

Table 11: Coefficients of human and relational capital variables for performance

	Model	UC		SC	t	Sig.
		B	Std. Error	Beta		
5A	(Constant)	-0.041	0.035		-1.176	0.267
	LNB	-0.009	0.006	-3.069	-1.532	0.157
	ADME	-8.638	0.000	-0.241	-0.539	0.602
	CR	-0.003	0.002	-0.531	-1.788	0.104
	LNAGE	0.007	0.003	1.509	2.723	0.021
	LNCEOEX	0.001	0.002	0.279	0.685	0.509
	LNCEOP	0.002	0.010	0.109	0.202	0.844
	CEOIN	0.000	0.000	-0.233	-0.609	0.556
	CEOED	-0.001	0.001	-0.293	-1.184	0.264
	LNSC	0.008	0.005	3.113	1.620	0.136
5B	LNEPB	0.005	0.006	0.600	0.865	0.407
	(Constant)	-2.229	3.122		-0.714	0.491
	LNB	-0.099	0.511	-0.087	-0.193	0.851
	ADME	-7.336	0.000	-0.051	-0.513	0.619
	CR	0.144	0.143	0.067	1.009	0.337
	LNAGE	0.089	0.233	0.048	0.383	0.710
	LNCEOEX	0.207	0.154	0.122	1.341	0.210
	LNCEOP	1.083	0.884	0.147	1.225	0.249
	CEOIN	0.008	0.032	0.020	0.239	0.816
	CEOED	0.040	0.062	0.036	0.649	0.531
5C	LNSC	0.962	0.439	0.943	2.192	0.053
	LNEPB	0.857	0.552	0.241	1.553	0.151
	(Constant)	-0.182	0.401		-0.453	0.660
	LNB	-0.138	0.066	-1.565	-2.106	0.061
	ADME	3.462	0.000	0.031	0.189	0.854
	CR	0.019	0.018	0.112	1.019	0.332
	LNAGE	0.026	0.030	0.182	0.886	0.397
	LNCEOEX	0.006	0.020	0.047	0.308	0.764
	LNCEOP	-0.153	0.114	-0.269	-1.350	0.207
	CEOIN	0.010	0.004	0.355	2.500	0.031
CEOED	-0.007	0.008	-0.079	-0.857	0.412	
LNSC	0.103	0.056	1.302	1.828	0.097	
LNEPB	0.136	0.071	0.495	1.924	0.083	

Note: a. Dependent Variable: CR; UC = Un-standardized Coefficient, SC = Standardized Coefficient

Hypothesis 4 (H₄): Bank's relational capital will positively affect its performance.

Hypothesis 5 (H₅): Bank's human capital and relational capital will jointly positively affect its performance.

Variables of the Study

Human Capital Variables

- CEO's firm-specific experience (CEOEX)
- CEO's past experience (CEOP)
- CEO's industry specific experience (CEOIN)
- CEO's education level (CEOED)
- Staff costs (SC)

- Number of employees per branch (EPB)

Relational Capital Variables

- Number of branches (B)
- Administrative expenses (ADME)
- Advertising and marketing expenses (ADVE)
- Brand value (BVA)
- Brand rating (BR)
- Customer relationship (CR) = Borrower's growth rate/Depositor's growth rate
- Age (AGE)

Financial Performance Variables

- Return on assets (ROA) = PAT/Total assets
- Total assets
- Tobin's Q = (Borrowings + Market Capitalization)/Total assets

Sampling procedure

For the purpose of the study most of the secondary data pertaining to the Indian Banking Industry has been collected from the Prowess database. Initially a sample size of 80 banks was taken, but owing to lack of data availability and inconsistencies in data quality a final sample size of 46 banks was selected made for the study. Relevant data pertaining to these banks for a period of seven years (2005-2011) has been used for the study.

Limitations of the Study

1. Owing to time and resource constraints qualitative study requiring interviews of CEO level personnel of sample banks had to be abandoned.
2. More data pertaining to intangible assets could not be collected since it was impossible to access bank's private databases.
3. In many cases it was found that disclosure of data pertaining to intangible assets was inconsistent.
4. ROA, which has been chosen as a measure of firm performance is historical in nature and is sensitive to accounting methods adopted by various banks.

Data Analysis

Descriptive Statistics of Human Capital and Service Quality Variables

The following table depicts the descriptive statistics for the human capital and service quality, the Relational Capital variables and Financial Performance and Control variables.

Interpretation

From the output given above it is observed that the LNCEOEX (CEO's firm specific experience) is 1.2 years on an average with a low variability of only 1.09. Similarly LNCEOEP (past experience as CEO) is 3.44 years on an average with a low variability of 0.17. The same can be said about CEOED (CEO's level of education), LNSC (staff costs) and LNEPB (number of employees per branch) each having an average value of 4.35, 8.77 and 2.58 and with a low variability of 1.36, 2.07 and 0.37 respectively. But it is observed that the CEOIN (CEO's industry experience) has an average value of 34.43 years with a high variability of 7.59.

From the above data it is also observed that the LNB (number of branches) has a mean value of 6.67 with a very low variability of 1.14. This is similar for BR (brand rating), LNAGE (bank age) and CR (customer relationship) which have average values of 7.28, 4.12 and 1.34 and variability of 0.797, 0.690 and 0.908 which is low. On the other hand it is observed that the ADVA (advertising and marketing expenditures), ADME (administrative expenses) and BVA (brand value added) are having average values 446.32, 9941.70 and 675.11 but high variability of 1443.09, 16237.07 and 1167.11.

The average values of LNASSETS (assets), ROA (Return on Assets) and the Tobin's Q (Financial performance metric) are observed to be 12.61, 0.007 and 0.151 respectively. Also while ROA and Tobin's Q have low variability of 0.006 and 0.151 respectively, the LNASSETS is found to have a slightly higher variability of 2.05 as compared to the other control variables.

Correlation Analysis

The following table depicts the results of the correlation analysis of human capital variables and service quality.

Interpretation

A correlation test was run to test whether any possible association or link exists between the variables used in the study. The results indicate that other than LNCEOEP (-0.701) all the other variables have a positive correlation with LNCEOEX. Similarly it is observed that there does not exist any significant relationship between the variables other than LNCEOEX and LNCEOEP (-0.701), LNSC (0.442), LNCEOEP and CEOIN (0.538), LNEPB (-0.492) and LNSC and LNEPB (0.329). This implies that when the value for LNCEOEX (CEO's firm-specific experience) is high the value for LNCEOEP (past experience as CEO) is low. This is due to the fact that out of the CEOIN (total industry experience which is constant in each particular case) which a CEO has, greater is the LNCEOEX lesser has to be the LNCEOEP. This is because the sum of CEOEX and CEOP make up the CEOIN. Similarly it can be said that firms with greater CEO's firm-specific experience have a high value of LNSC (staff costs), firms with high value of LNCEOEP (CEO's past-managerial experience) have a higher value of CEOIN (CEO's total industry experience). This is because CEOP is measured as a part of the total CEOIN. Also firms with high value of LNCEOEP are seen to be having lesser values of LNEPB (number of employees per branch). Finally it is also observed that firms with high value of LNEPB also have high value of LNSC (staff costs).

Interpretation

The correlation analysis indicates that the variables do not have much significant relationship with each other than LNB (number of branches) and ADME (Administrative expenses) (0.543), BVA (Brand Value Added) (0.466), BR (Brand Rating) (0.534), LNAGE (bank's age) (0.344), ADVA (Advertising

Expenses) and ADME (Administrative Expenses) (0.623), BVA (0.467), LNAGE (-0.323), ADME and BVA (0.944), BR (Brand Rating) (0.419) and BVA and BR (0.307). Amongst all these only ADVA and LNAGE have a negative correlation indicating newer banks are spending more on advertisement and marketing themselves. On the other hand it is seen that more is the number of branches more is the administrative expenses, brand value, brand rating and bank's age. Banks with high advertisement expenses also have high administrative expenses and brand value. Banks with high administrative expenses also have a high brand value and brand ratings.

Interpretation

The results depict that LNASSETS (Assets) has a higher correlation with ROA (Return on Assets) (0.440) but not such a high correlation with Tobin's Q (0.222). ROA and Tobin's Q have a very insignificant correlation. This means that banks with high assets also generate higher returns and vice versa.

Regression Analysis

The regression was carried out to analyze the impact of different independent variable on their dependent variable. A summary of different models to be tested are shown below.

Model 1: Impact of Relational Capital Variables on Customer Relationship.

$$CR = \beta_0 + \beta_1 ADVA + \beta_2 ADME + \beta_3 LNAGE - \beta_4 LNB + \beta_5 BVA + \beta_6 BR + \varepsilon \quad \text{----- (1)}$$

Model 2: Impact of Human Capital Variables on Customer Relationship.

$$CR = \beta_0 + \beta_1 LNB + \beta_2 ADVA + \beta_3 LNAGE + \beta_4 LNCEOEX + \beta_5 LNCEOEP + \beta_6 CEOIN + \beta_7 CEOED + \beta_8 LNSC + \beta_9 LNEPB + \varepsilon \quad \text{----- (2)}$$

Model 3: Impact of Human Capital Variables on Bank's Performance

$$a) ROA = \beta_0 + \beta_1 LNSC + \beta_2 LNEPB + \beta_3 LNCEOEX + \beta_4 LNCEOEP + \beta_5 CEOIN + \beta_6 CEOED + \varepsilon \quad \text{----- (3A)}$$

$$b) LNASSETS = \beta_0 + \beta_1 LNSC + \beta_2 LNEPB + \beta_3 LNCEOEX + \beta_4 LNCEOEP + \beta_5 CEOIN + \beta_6 CEOED + \varepsilon \quad \text{----- (3B)}$$

$$c) \text{Tobin's Q} = \beta_0 + \beta_1 LNSC + \beta_2 LNEPB + \beta_3 LNCEOEX + \beta_4 LNCEOEP + \beta_5 CEOIN + \beta_6 CEOED + \varepsilon \quad \text{----- (3C)}$$

Model 4: Impact of Relational Capital Variables on Bank's Performance

$$a) ROA = \beta_0 + \beta_1 LNB + \beta_2 ADME + \beta_3 CR + \beta_4 LNAGE + \beta_4 ADVA + \varepsilon \quad \text{----- (4A)}$$

$$b) LNASSETS = \beta_0 + \beta_1 LNB + \beta_2 ADME + \beta_3 CR + \beta_4 LNAGE + \beta_4 ADVA + \varepsilon \quad \text{----- (4B)}$$

$$c) \text{Tobin's Q} = \beta_0 + \beta_1 LNB + \beta_2 ADME + \beta_3 CR + \beta_4 LNAGE + \beta_4 ADVA + \varepsilon \quad \text{----- (4C)}$$

Model 5: Impact of Human and Relational Capital Variables on Bank's Performance

$$a) ROA = \beta_0 + \beta_1 LNB + \beta_2 ADME + \beta_3 CR + \beta_4 LNAGE + \beta_5 0.001 LNCEOEX + \beta_6 LNCEOEP + \beta_7 CEOIN + \beta_8 CEOED + \beta_9 LNSC + \beta_{10} LNEPB + \varepsilon \quad \text{----- (5A)}$$

$$b) LNASSETS = \beta_0 + \beta_1 LNB + \beta_2 ADME + \beta_3 CR + \beta_4 LNAGE + \beta_5 0.001 LNCEOEX + \beta_6 LNCEOEP + \beta_7 CEOIN + \beta_8 CEOED + \beta_9 LNSC + \beta_{10} LNEPB + \varepsilon \quad \text{----- (5B)}$$

$$c) \text{Tobin's Q} = \beta_0 + \beta_1 LNB + \beta_2 ADME + \beta_3 CR + \beta_4 LNAGE + \beta_5 0.001 LNCEOEX + \beta_6 LNCEOEP + \beta_7 CEOIN + \beta_8 CEOED + \beta_9 LNSC + \beta_{10} LNEPB + \varepsilon \quad \text{----- (5C)}$$

Regression Models:

R represents the degree of correlation between the observed and predicted values of the dependent variable. The R value lies between 0.436 and .990 which indicates, other than Model 4A (ROA as a dependent viable), all the predicted values of

dependent variable using the independent variables are strongly correlated to their observed value of dependent variables. R Square represents the degree of standard deviation in the dependent variable that can be explained using the independent variables. R Square values having the range between 0.390 and 0.981 indicating that the independent variables are moderately to very strongly associated with the dependent variables.

Adjusted R Square indicates that if there is an addition of extraneous predictors to the model it can add significant predictability to the dependent variable. As the values lies between 0.005 and 0.180, it can be concluded that the models are good fit in nature. The Durbin-Watson Statistic is used to test for the presence of serial correlation among the residuals and the values ranges from 1.708 and 2.770 it can be concluded that the residuals are mostly uncorrelated.

ANOVA:

F-test is used to check whether the independent variables are statistically significant or not.

As all the Sig. values are less than the significance level i.e. 0.05, it can be concluded that independent variables are significantly different from each other.

Interpretation

The first variable is the constant which represents the intercept of the regression line on the Y-axis i.e. the Y-intercept. It also represents the predicted value of the dependent variable when all the independent variables are 0.

The regression equation for the above case can be given as
 $CR = 0.147 + 0.000 ADVA + 0.004 ADME + 0.350 LNAME - 0.120 LNB + 0.032 BVA + 0.030 BR$

The regression equation for the above case can be given as
 $CR = 7.155 + 0.985 LNB + 0.000 ADVA + 0.215 LNAME - 0.214 LNCEOEX - 0.466 LNCEOEP - 1.938 CEOIN - 0.222 CEOED - 0.664 LNSC + 1.020 LNEPB$

The regression equations for the models shown above can be given as

$$ROA = 0.006 + 0.000 LNSC + 0.003 LNEPB + 0.000 LNCEOEX - 0.002 LNCEOEP + 0.000 CEOIN + 0.000 CEOED$$

$$LNASSETS = -1.320 + 0.901 LNSC + 0.687 LNEPB + 0.163 LNCEOEX + 1.249 LNCEOEP - 0.007 CEOIN + 0.021 CEOED$$

$$\text{Tobin's } Q = 0.50 - 0.014 LNSC + 0.228 LNEPB + 0.000 LNCEOEX - 0.164 LNCEOEP + 0.007 CEOIN - 0.009 CEOED$$

The regression equations for the models shown above can be given as

$$ROA = 0.002 + 0.000 LNB + 2.110 ADME - 0.002 CR + 0.001 LNAME + 3.290 ADVA$$

$$LNASSETS = 8.602 + 1.171 LNB - 7.473 ADME - 0.006 CR - 0.802 LNAME + 4.385 ADVA$$

$$\text{Tobin's } Q = 0.760 - 0.002 LNB + 7.957 ADME + 0.008 CR - 0.148 LNAME + 1.430 ADVA$$

The regression equations for the models shown above can be given as

$$ROA = -0.041 - 0.009 LNB - 8.638 ADME - 0.003 CR + 0.007 LNAME + 0.001 LNCEOEX + 0.002 LNCEOEP + 0.000 CEOIN - 0.001 CEOED + 0.008 LNSC + 0.005 LNEPB$$

$$LNASSETS = -2.229 - 0.099 LNB - 7.336 ADME + 0.144 CR + 0.089 LNAME + 0.207 LNCEOEX + 1.083 LNCEOEP + 0.008 CEOIN + 0.040 CEOED + 0.962 LNSC + 0.857 LNEPB$$

$$\text{Tobin's } Q = -0.182 - 0.138 LNB + 3.462 ADME + 0.019 CR + 0.026 LNAME + 0.006 LNCEOEX - 0.153 LNCEOEP + 0.010 CEOIN - 0.007 CEOED + 0.103 + 0.136 LNEPB$$

Hypotheses Testing

Hypothesis 1 (H₁): Bank's brand will positively affect its customer relationships

From the results of the regression analysis investigating the impact of relational capital variables on the customer relationship as shown in table 7, it is observed that there is a fair positive correlation (0.540) between the predicted value if the dependent variable i.e. the customer relationship predicted on the basis of the relational capital variables which are considered as the proxies chosen for a bank's brand and its observed value. Hence it can be concluded that a bank's brand positively affects its customer relationship.

Hypothesis 2 (H₂): Bank's human capital (HC) will positively affect its customer relationships

From the results of the regression analysis investigating the impact of human capital variables on customer relationship as shown in table 8, it is observed that there is high correlation (0.795) between the predicted value if the dependent variable i.e. the customer relationship predicted on the basis of the human capital variables and its observed value. Hence it can be concluded that a bank's human capital positively affects its customer relationship.

Hypothesis 3 (H₃): Bank's human capital will positively affect its performance

From the results of the regression analysis investigating the impact of human capital variables on its performance as shown in table 9, it is observed that there is high correlation (0.617, 0.990 and 0.966) between the predicted value of the dependent variables i.e. ROA (return on assets), LNASSETS (assets) and Tobin's Q predicted on the basis of the human capital variables and their observed value. Hence it can be concluded that a bank's human capital positively affects its performance.

Hypothesis 4 (H₄): Bank's relational capital will positively affect its performance

From the results of the regression analysis investigating the impact of relational capital variables on bank's performance as shown in table 10, it is observed that there is high correlation (0.436, 0.961 and 0.711) between the predicted value of the dependent variables i.e. ROA (return on assets), LNASSETS (assets) and Tobin's Q predicted on the basis of the relational capital variables and their observed value. Hence it can be concluded that a bank's relational capital positively affects its performance.

Hypothesis 5 (H₅): Bank's human capital and relational capital will jointly positively affect its performance

From the results of the regression analysis investigating the impact of human capital and relational capital variables on bank's performance as shown in table 11, it is observed that there is high correlation (0.825, 0.992 and 0.978) between the predicted value of the dependent variables i.e. ROA (return on assets), LNASSETS (assets) and Tobin's Q predicted on the basis of the human capital and relational capital variables and their observed value. Hence it can be concluded that a bank's human capital and relational capital positively affects its performance.

Findings of the Study

- Relational capital assets possessed by banks i.e. their brand positively affect their customer relationships.
- Human capital assets possessed by banks positively affect their customer relationships.
- Relational capital assets possessed by banks positively affect their performance.

- Human capital assets possessed by banks positively affect their performance.
- Human capital and relational capital assets possessed by banks i.e. the total intangible assets positively impact their performance.

Suggestions

- Banks should build up on human capital intangible assets both at employee and top management level.
- Banks should build up on relational capital intangible assets such as brand recognition, brand awareness etc.
- Banks should invest in marketing campaigns to promote itself.
- Banks should concentrate in building customer relationships through preference offerings for regular customers and good services as it is cheaper to service an existing customer than acquiring a new one.

Conclusion

It is observed that there exists a positive relationship between the intangible assets and performance for firms in general in the banking industry in India. The results indicate that the intangible assets and firm performance share a positive correlation with each other implying a favorable movement in intangible assets in terms of human capital at top management level or employee level or relational capital in terms of various metrics of brand equity such as brand rating, brand value or marketing campaigns to improve brand recognition is reflected by similar favorable movements in the firm performance. Hence it may be concluded that in the intense competitive environment in which firms in the banking industry operate it would be beneficial for banks to build on their intangible assets in terms of human capital and relational capital or brand equity in order to improve their performance as the principle advantage which the intangible assets provide over tangible assets is that they cannot be easily duplicated by competitors. So banks building on their intangible assets will be on the path to sustained competitive advantage in the future.

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