

A Review on Integration of Balanced Scorecard and Intellectual Capital for Performance Evaluation of Banks: A New Measurement Framework

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ABSTRACT

In this age of innovation and globalization, interest in research on measuring and analyzing intellectual capital (IC) and determining its impact on business performance is on the rise. This study is intended to review the literature concerning the effects of implementing the Balance Scorecard (BSC) on the organizational performance of banks, with the Intellectual Capital (IC) enhancement being the mediator. Based on the literature a new comprehensive performance measurement framework for banks has been proposed. This framework can be validated through further research by integrating the interaction between BSC and IC components in the context of Bangladeshi banks by examining different banking environment i.e. nationalized, private commercial, foreign commercial and Islamic banks, as the literature shows strong deviation in measurement models depending on the nature of business.

Keywords: Balanced Scorecard, Intellectual capital, Organizational performance.

I. INTRODUCTION

The operating performance of banks is highly reliant on sustainable client relationships that are subject to the caliber of human resource and banks' ability to keep their clients satisfied. The shortcomings of conventional financial reporting system have provoked an evolving dialogue on modeling, measuring and reporting a bank's intangible assets i.e. intellectual capital (IC) for sustainable performance growth (Arora, 2002) strategically linked with the overall mission and vision of the firm through implementation of Balanced Scorecard (BSC) (Kaplan and Norton, 1992). This study primarily aims to contribute to the relatively scarce empirical literature emphasizing on the integration effects of IC and BSC on business performance in the banking

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industry and to find out the relevance of these two techniques in measuring performance individually and collectively in the financial sector.

II. BALANCED SCORE CARDS PERFORMANCE MEASUREMENT TECHNIQUE IN BANKS

Poor strategic implementation through reliance on traditional financial ratios to review the banking performance motivated Kaplan and Norton (1992) to recommend the Balanced Scorecard as an instrument to associate performance measures from four different standpoints: Financial, Customer, Internal Processes, and Learning and Growth. BSC aligns the value of intangible assets with tangible ones including financial and non-financial criteria in a single report and in a "balanced" way (Kaplan and Norton, 2004). Garrison and Noreen (2000) have indicated that learning is necessary to improve internal business process, resulting in customer satisfaction and enhancement in the financial results. Zhang and Li (2009) found BSC to raise the value of performance evaluation system in commercial banks in China. Ahmed et al. (2011) through a sample of 27 Pakistani banks and Fakhri et al. (2011) through an extensive literature review and a survey with a sample of 55 banks in Libya, reported that many of the banks tended to implement customer related measures and other non financial measures such as learning and employee growth. Dave (2012), Panicker and Seshadri (2013), Nijjar and Kalaf (2012). Elif Öztürk1 & Ali Coskun (2014) reviewed strategic approach for BSC in banks and concluded that preparation of the balanced scorecard for the banks is more functional than reporting financial performance only. The issue of the key performance indicators (KPIs) for the four perspectives for banks and other financial institutions has been center of research interest among several scholars. The following table summarizes the major indicators:

FIGURE 1: KPIs for BSC Implementation

BSC Perspective	KPIs	Research Authors
Financial perspective	Capital Adequacy Ratio, Cash- Deposit Ratio, Credit Deposit Ratio, Net Interest Margin to Total Asset Ratio, Interest Income to Total Asset Ratio, Investment Deposit Ratio, Operating income, Return on Investment (ROI), Revenue Growth, Return on Asset (ROA), Return on Equity(ROE), Net Profit after tax, Earnings per Share (EPS), Economic Value Added (EVA), 30-day loan delinquencies, Net Profit Margin	Evans, (2004); Banker et al, (2004); Lipe & Salterio 2000 (2002); Lu-Ann Bean and Bill D. Jarnagin (2002); Wu, Tzeng and Chen, (2009); Dave et al, (2012).

BSC Perspective	KPIs	Research Authors
Customer perspective	Customer Satisfaction Survey, Customer Retention, New customer acquisition, Customer response time, Market share, Post-sales service and Customer profitability, Profit per customer	Kaplan and Norton, (1996a); Kaplan & Atkinson, (1998); Evans, (2004); Hoque <i>et.al.</i> , (1997 and 2003); Banker <i>et al.</i> , (2004); Zimmerman, (2003); Malina and Selto, (2001); Wu, Tzeng and Chen, (2009).
Internal business process perspective	Business per employee, Profit per employee, Wage bill to Income Ratio, Product/process design, Product development, Service efficiency, effectiveness and quality, No. of new service items, customer complaints, Transaction efficiency, Rationalized forms & processes, Management performance, Sales performance	Wu, Tzeng and Chen, (2009); Dave et al, (2012).
Learning and growth perspective	Employee training, Individual and corporate self-improvement, Investments in new technology, Innovative products & services, Creativity and innovation, Empowerment, Employee development, Customer orientation, Job satisfaction, Intellectual abilities of employees, Information systems, and Organizational procedures to manage a business, Adaptation ability to changes, Responses of customer service, Professional training, Employee stability, Employee satisfaction, Organization competence	Zimmerman, (2001); Kaplan & Norton, (1996a); Evans, 2004; Schneider, (1993); Usala, (1996); Istiaque et al, (2007); M. Lebas, (1995); Wu, Tzeng and Chen, (2009).

III. INTELLECTUAL CAPITAL AND ORGANIZATIONAL PERFORMANCE

The term "Intellectual capital" was originally introduced by John Kenneth Galbraith in 1969 as an intellectual contribution owned by individuals (Feiwal, (1975) and Ding, (2010)). Stewart (1997) in his definition for IC included education, knowledge, information, expertise, intellectual property in addition to experiences that are used to create wealth. Edvinsson and Malone (1997), Sveiby (1997), Roos et al.(1997), Bontis (1999), O'Donnell et al. (2004, 2006), Sallebrant et al. (2007), Curado and Bontis (2007) among others, argued that intellectual capital should have the following characteristics:

- (i) Intangibility;
- (ii) Knowledge that creates value and;
- (iii) Effect of collective practice.

According to Edvinsson & Malone (1997) IC is the sum of *human* and *structural capital*. They further categorized *structural capital* into *organizational capital* and *customer capital*. Stewart (1997) approved Edvinsson and Malone's classification to some extent. However he separated customer capital from the structural one and gave it equal importance. *Competitive capital* (Rothberg and Erickson, 2002), *innovation capital* (Tseng and Goo, 2005; Wang and Chang, 2005), *Social capital* (Inkpen and Tsang, 2005; Nahapiet and Ghoshal, 1998; Davies and Magowan, 2002) and *technological capital* (Bueno et al., 2006) have been proposed as a fourth intellectual capital element. Bontis (1996) advocated for *relationship capital* as a broader idea that encompasses customer capital as well as all the significant associations, such as company-customer relations, company-supplier relations, employee-supervisor relations, inter-employee relations, inter-departmental relations, among other internal social capital-based interaction (Leana and Van Buren, 1999; Nahapiet and Ghoshal, 1998). Adler and Kwon (2002) and Chang (2010) agree that Bontis' definition for relationship capital shares the similar elements with social capital. Despite the fact that intellectual literature still debates on the components of Intellectual Capital, IC is essentially a multidimensional idea with the amalgamation of the following elements of the firm (Bontis, 1996; Bontis, 1998; Johnson, 1999; Chen 2001; Meritum Project, 2002; Cabrita and Vaz, 2006):

FIGURE 2: Components of IC (Johnson, 1999)

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- A. Human capital (HC):** The idea capital (the manpower for knowledge-based duties and employee aptitudes and attitudes) and leadership capital (the qualities of a manager)
 - B. Structural capital (SC):** The innovation capital (patents, trademarks, copyright and knowledge archives) cultural capital (organizational internal relations) and process capital (work procedures and trade secrets)
 - C. Relational capital (RC):** Firm's relationships with customers, suppliers and online-community members
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Nevertheless extensive research on IC initiated in the knowledge intensive developed countries, this experience has universal appeal as evidenced in researches within Australia (Bontis and Girardi, 2000), Malaysia (Bontis et al., 2000), Ireland (O'Regan et al., 2001; 2005), Mexico (Trevinyo-Rodriguez and Bontis, 2007), Portugal (Cabrita et al., 2007; Cabrita and Bontis, 2008), Germany (Kristandl and Bontis, 2007), Egypt (Seleimet al., 2004, 2007), Serbia (Bontis, Janosević, Dzenopoljac 2013), Belgium and Luxemburg (Mention and Bontis, 2013) and others.

IV. IMPACT OF INTELLECTUAL CAPITAL ON BANKING PERFORMANCE

Banks meet the requirements of knowledge-intensive organizations as most of their actions are of an intellectual nature with well educated, competent and continuously trained employees forming the majority of the workforce (Alvesson, 2000). Banking industry, in particular, represents ample opportunities for research setting as banking operations rely on the amalgamation of information and communication technologies (ICTs) for the development of new and innovative products and services and close interaction with customers through human resource and are highly regulated, diverse, risky by nature and market sensitive (Bontis, 2013).

FIGURE 3: Summary of Researches on Influence of IC Performance on Banking Performance

Author(s)	Research Origin	Major Findings
Mavridis (2004)	141 Japanese banks for the period 2001-2003	In terms of corporate performance, best performing banks mainly have very good results in their use of IC and less so in their use of physical capital.
Mavridis and Kyrmizoglou, (2005)	17 Greek banks for the period 1996-1999	Corporate performance of these banks is significantly affected by IC (mainly human capital).
Mohiuddin et al. (2006)	17 Bangladeshi commercial banks for the period from 2002 to 2004	Human capital is the most dominant factor in IC measurement through VAIC.
Cabrita and Bontis (2008)	53 Portuguese banks	Human Capital has important effects on both structural capital and relational capital and influences relational capital not only directly but also indirectly through the structural capital and influences business performance indirectly.
Young et al., (2009)	8 Asian economies (Hong Kong, Indonesia, Malaysia, the Philippines, Singapore, South Korea, Thailand, and Taiwan) over the 6 year period (1996-2001)	Human capital and physical capital were the main driving forces of value creation in the observed period.
Puntillo (2009)	Italian banks	The study found a positive relationship only between capital employed efficiency (CEE) and return on assets (ROA) and return on equity (ROE)

Author(s)	Research Origin	Major Findings
Joshi et al., (2010)	11 Australian banks for the period 2005-2007 using VAIC methodology	The value creation capability of banks in Australia is directly attributable to their Human Capital Employed.
Abdulsalam et al., (2011)	Kuwaiti banks (For the period 1996-2006)	Commercial banks outperformed non-commercial ones over 3 years (2004-2006) showing better exploitation of IC and physical capital.
Bontis, Janosevic and Dzenopoljac (2013)	Serbian banks through VAIC performance	Physical capital dominates profitability and ROE but its role must be replaced by impacts of HCE and SCE if banks are to sustain competitive advantage in the long run. Human capital is undervalued and not exploited properly. Structural capital, resulting from the external relations of banks (mostly owned by foreign entities), has an inadequate effect on corporate performance.
Mention and Bontis (2013)	200 banks within Luxembourg and Belgium	Human capital was both a direct and an indirect contributor to business performance. Structural and relational capitals were found to be positively related to business performance.

The studies on Malaysian banks (Goh, 2005) and (Ting and Lean, 2009), Indian banks (Kamath, 2007), Japanese banks (Mavridis, 2004) and Pakistani banks (Kamath (2010) and Shaari et al., (2011)) indicate that the leading banks are those who primarily perform best in terms of usage of their IC. Interesting observation of these studies was that the inter component relationship between IC was determined by the nature and portfolio of the banking business of the country. The research on Portuguese banks by Cabrita and Bontis (2008) and on

US banks, by Reed et al. (2006) found that HC through RC and SC to positively affect financial performance in retail based banks. Comparing service and non-service industries in Malaysia, Bontis et al. (2000) indicated that HC is positively related to customer capital in both settings. Mention and Bontis (2013) found HC to be the exclusive direct positive and statistically significant contributor to business performance in Belgium and Luxemburg banks predominantly based on private banking that maintains banking secrecy and investment management activities.

FIGURE 4: Indices of Intellectual Capital (Source: Chen et al, 2004)

IC Component	Characteristics	Indicators
Human Capital	Employees' competence	Strategic leadership of the management
		Efficiency of employee training
		Qualities of the employees
	Employees' creativity	Learning ability of the employees
		The employees' ability to participate in policy making
		Training of key technical and managerial employees
Employees' attitude	Employee's creative ability	
	Income on employees' original ideas	
	Employees' attitude	
	Identification with corporate values	
Structural Capital	Corporate culture	Identification with corporate values
		Satisfaction degree
	Operation process	Employees' turnover rate
		Employees' average serviceable life
		Construction of company culture
Organizational structure	Employee's identification within company	
	Business process period	
	Product quality level	
Organizational learning	Corporate operating efficiency	
	Clarification of relationship among authority, responsibility and benefit	
		Validity of enterprise controlling system
		Construction and utilization of inner information net
		Construction and utilization of company repository

IC Component	Characteristics	Indicators
Relational Capital	Information system	Mutual support and cooperation between employees
		Availability of enterprise information
		Share of knowledge
	Basic marketing capability	Customer service capability
		Identifying ability of customer's needs
	Market intensity	Market share
		Market potential
		Unit sales to customer
	Customer loyalty indices	Brand and trademark reputation
		Construction of sales channel
Customer satisfaction		
Customer complaint		
		Customer outcome
		Investment on customer relationship

IV (A) HUMAN CAPITAL AND ORGANIZATIONAL PERFORMANCE

Recognized as the central component of IC, Bontis (1998) refers to human capital as “the source of innovation and strategic renewal” that includes all intangibles i.e. the knowledge, skills, experiences and abilities of the members of the firm (Edvinsson and Malone, 1997; Roslender and Fincham, 2004). Extremely reliant on intellectual excellence of managers, knowledge retention has been a concern for bank management (Stovel and Bontis, 2002; Bontis and Fitz-Enz, 2002). Arguing that knowledge required for banking operations is more complex than in most industries and can be lost through seasoned bankers leaving the bank. Shih et al. (2010) highlighted the need for knowledge retention as a core driver of competitiveness, while Namasivayam and Denizci (2006) recognized that customers' perceived value is subject to emotional intelligence, creativity and product knowledge for frontline bankers. Employee satisfaction is closely associated with commitment to the organization (Brooke et al., 1988; Cramer, 1996), employee morale and motivation (Bontis and Fitz-Enz, 2002) and retention (Mowday et al., 1982) resulting in better customer service and sustainable financial results. Bontis (1998); Tseng and Goo (2005); Wang and Chang (2005); Cohen and Kaimenakis (2007); Cabrita and Bontis, (2008); Jardon and Martos (2009); Sharabati et al. (2010) and Mention and Bontis (2013) evidenced the dominant function of HC on firm's performance either directly or indirectly through RC and SC.

IV (B) Structural Capital and Organizational Performance

Cabrita and Bontis (2008) defined structural capital as the organization's capabilities to meet its internal and external challenges including infrastructures, information systems, routines, procedures and organizational culture. SC is primarily the infrastructure that persuades the HC to create and leverage its knowledge (Edvinsson and Sullivan, 1996). Bank managers are increasingly shifting their major focus on assets productivity, capital efficiency and revenue growth with cost reduction and innovation with the help of ICT (Cabrita and Bontis, 2008) by value addition to clientele through online, real-time access to banks' operation (e-banking, mobile banking) (Gago and Rubalcaba (2007). While SC does not bank's performance on its own (Stewart, 1997), they play a critical role in leveraging IC into increasing the value of an organization coupled with work processes and knowledge development (Soh and Markus, 1995).

IV (C) Relational Capital and Organizational Performance

Relational Capital refers to the ability of an organization to interact with a wide range of external stakeholders (such as customers, suppliers, competitors, and industry associations) as well as the knowledge embedded in these relationships (Bontis, 1998; Edvinsson and Malone, 1997; Sveiby, 1997). Bontis (2013) found that loyalty, reputation and professional associations determine success in banking industry, acting as information provider, catalyst for networking activities and lobbyist toward supranational entities (Kotler and Keller, 2006; Berry and Parasuraman, 1991; Chaudhuri and Holbrook, 2001). Employees' satisfaction, motivation and commitment foster customer satisfaction, loyalty and retention, leading to higher productivity (Kaplan and Norton, 1996, 2004).

V. INTREGATION OF BALANCED SCOPRECARD AND INTELLECTUAL CAPITAL FOR ORGANIZATIONAL PERFORMANCE:

Arora (2002) discussed about the implementation of intellectual capital accumulation though effective use of BSC. BSC has emerged as a powerful strategic management tool (Bontis et al., 1999; Johanson et al., 2001a, b), and is complementary to IC (Bukh et al., 2002). Kaplan and Norton (2004a) emphasized on how to align intangible assets i.e. IC to an enterprise's strategy by creating customized strategy maps that allow organizations to incorporate investments in people, technology, and organizational capital. They also indicated that the measurement and management of IC contributes to the transformation of non-financial performances into financial performances of

organizations through BSC (Kaplan and Norton, 2004b). However, they only focused on the learning and growth perspective of BSC. Wu (2002) argued that the distinctive structure of BSC guides both the formation and reinforced management of IC.

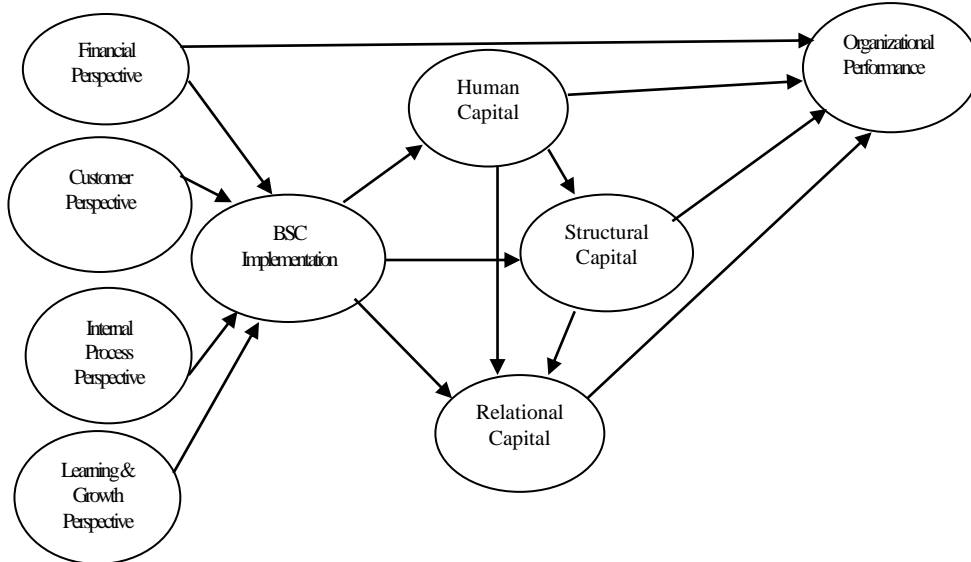
According to his findings, strategic objectives under BSC's *learning-and-growth* perspective are antecedent of the innovation capital and human capital in IC; strategic objectives under BSC's internal-business-process perspective, the process capital; strategic objectives under BSC's customer perspective, the relationship capital. Several studies have suggested that BSC can be used to measure and manage IC (Businessline, 2002; Andriessen 2004). Skandia, one of Sweden's leading global financial companies, developed a systematic way of visualizing and measuring IC through BSC. The Skandia Navigator has been followed by several other companies, including Dow-Chemicals, CIBC, Hewlett-Packard and Canon in a customized form. Businessline (2002) believed that Skandia links IC indicators with its financial results building on BSC model. Bontis et al. (1999), Petty and Guthrie (2000) and Mouritsen et al (2005) indicated that both BSC and IC indicators are interesting and relevant; treating strategy as an explicit part of a performance management system. Their study, however, advocated that the ideas of IC and BSC differ in terms of their association with firm's strategy, organization and management that create fundamentally diverse management decision-making.

Integration of BSC and IC management have been a focal point in Taiwanese research field. Yu-Shin Tseng (2006), Chung-Ming Chang (2012), Mei-Fen Wu (2012), and Yung-Chieh Chien (2012), among several others, observed the effects of BSC implementation on the IC accumulation of Taiwanese Companies with results showing that: IC accumulation has a full mediation effect on BSC implementation and organizational performance. Chen (2006) studied connections between IC and BSC using the typical correlation analysis and concluded that the higher consistency in effective IC applications, the better the company's operating performance. Chen (2011), through case study, and Dang (2011), through a Path Analysis Model, demonstrated that IC exerts a positive influence on a company's financial performance. Yu (2003), through a regression analysis of IC and non-financial BSC perspectives in Taiwan-based banks, concluded that a good-fitting model can be constructed incorporating the components of IC with non-financial BSC indicators, and that non-financial indicators have explanatory power regarding the financial indicators.

VI. CONCLUSION AND DIRECTIONS FOR FUTURE RESEARCH

Business models, in this knowledge intensive era, are exposed to conditions in which intangibles have more value creation capabilities than tangibles (Janosevic, 2009). Reviewing the literature, the following framework is proposed for integration of BSC and IC accumulation for banking sector performance evaluation for future research:

FIGURE 5: Performance Measurement Framework for Banks



Further study is required to investigate the relationship between IC components in the context of Bangladeshi banks, as academic literature shows sharp deviation in different countries like Portugal, Serbia and Belgium depending on the nature of business. Interesting relationships may also be detected by examining various banking contexts like nationalized, private commercial, foreign commercial and Islamic banks, since Chaminade and Johanson (2003) believed cultural diversity to have a major role to play on intellectual capital enhancement (Bontis, 2004). Different statistical measurement method can be applied to test the same model principles by VAIC (Pulic, 2005), Structural Equation Modeling (Cabrita and Bontis, 2008 and Mention and Bontis, 2013) or ICBS methodology (Viedma, 2002). Finally, future research should also develop objective Key Performance Indicators (KPIs) in terms of BSC and IC for banks.

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