INTELLECTUAL CAPITAL PERFORMANCE AND ITS IMPACT ON CORPORATE PERFORMANCE: AN EMPIRICAL EVIDENCE FROM MODARABA SECTOR OF PAKISTAN.

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ABSTRACT

The aim of study of this is to examine the Intellectual Performance (IC) of 12 Modaraba companies and its impact on corporate performance. This study examines the performance of three main components of VAIC™ i.e. Human Capital Efficiency (HCE), Structural Capital Efficiency (SCE) and Capital Employed Efficiency (CEE) and its impact on corporate performance by employing the predictive analysis. The empirical results reveal that one of the important components to strengthen the IC performance is Human Capital Efficiency (HCE) which means investing more to boost the employees productive would increase the human efficiency of employees. The results show that HCE has significant relation at (P>0.1) with financial performance (ROE and EPS), SCE at (P >0.1) and (P>0.05) with financial performance (ROE) and (EPS) respectively. Whereas CEE has substantive effect with ROE and ROI at (P>0.05) and with (EPS) at (P>0.1) respectively.

Keywords: *Intellectual Capital (IC), Value Added (VA), Value Added Intellectual Coefficient (VAIC™), Human Capital Efficiency (HEC), Structural Capital Efficiency (SCE), Capital Employed Efficiency (CEE), (ROE), (ROI), (EPS), Modaraba Companies, Pakistan.*

INTRODUCTION

Modaraba companies have all the characteristics of knowledge base organization. The first sincere step was taken towards Islamization of Economy through the promulgation of Modaraba companies and Modaraba Ordinance in 1980. Modaraba is an Islamic mode of financing where people invest their capital and skill according to Islamic Shariah philosophy. The start of Modaraba companies were slow because lack of understanding among regarding Islamic Modes of Financing in early 1980s. Sharing and transform of knowledge is important for Knowledge Management. Modaraba companies not only transferring true knowledge of Islamic Modes of Financing but also increasing customer retention and satisfaction. Intellectual Capital represents intangible assets or also called as knowledge base assets. In traditional business environment organization tends to focus on tangible assets to increase the performance of organizations. But in turbulent business culture now organizations are more focus on knowledge or intellectual assets to increase value base efficiency and how value base efficiency increases the financial performance of corporate sector. This study aims Intellectual Capital (IC) performance that will be reflected by annual reports and its impact on financial returns of Modaraba companies.

Intellectual Capital

Intellectual Capital (IC) is one of important strategic asset in knowledge base economy. There are number of definitions of IC since its origin in fact that both knowledge based and economic based approaches exists. The knowledge economic is that where production and its distribution with the use of knowledge is a main force for creating growth and wealth defined by The Organization for Economic Co-operation and Development (OECD 1996). The human intellectual ability is a key intellectual and strategic asset which increases the efficiency of

firms. The World Bank (1998, p. 1) has indentified the importance of knowledge and intellectual ability: "Knowledge is like light. Weightless and intangible, it can easily travel the world, enlightening the lives of people everywhere". Itami (1987) argued that IC is an intangible asset which includes technology, brand name, customer loyalty, goodwill and copy rights etc. Intellectual Capital (IC) is a knowledge and information which create the value added efficiency to create wealth of corporations argued by Stewart (1997). Pulic (2001) concludes IC as employees and their abilities to create value added efficiency. The value creation efficiency of organization can be measured both tangible (Capital Employed) and intangible (Human and Structural Capital) argued by (pulic 2000a, b). Sullivan (2000, p. 17) defined IC as "knowledge that can be converted into profits". IC defined as knowledge which can be converted into value argued by (Edvinsson and Malone 1997). The intellectual assets are intangible in nature which does not contain any financial value. Many practitioners and scholars have indentify three basic components of IC i.e. human capital, structural capital and relational capital (Holton and Yamkovenko, 2008; Yang and Lin, 2009; Mavridis and Kyrmizoglou, 2005; Tayles et al., 2007). IC is recognized as human capital (skill), structural capital (data bases and organizational structure) and relational capital (customer and supplier relations) argued by Bornemann et al. (1999).

Human Capital
Human Capital is the skill and creativity of employees which can be further encourage by investing more in their training programs. Human Capital is experience and expertise of employees which increases the efficiency of organizations. More efficient employees means more efficient of organization to boost Value Added (VA) efficiency.

Structural Capital
Structural Capital is another important determinant of IC. It consists of all non human assets. It recognized as all systems, procedures, databases, copy rights, patents, structural procedures, rules and policies which are important for decision making as argued by Bontis et al. (2000).

Relational Capital
Relational Capital is a relationship of company with external stake holders. The cumulative trust, experience, and knowledge that forms the core of the relationship between businesses and their customers. Relational capital keeps customers from abandoning a commercial relationship (http://www.washingtonspeakers.co...apital.1002.pdf).

LITERATURE REVIEW
The empirical literature reveals that Intellectual capital (IC) encourages the business performance of organizations. A study was conducted to measure the effect of intellectual capital on Jordan pharmaceutical industry and they explored that IC has significant and positive impact on performance of Jordan pharmaceutical industry (Aziz et al, 2010). The same argue is supported by Bontis et al. (2000) to examine the constituents of IC i.e. (Human Capital, Structural Capital and Relational Capital) and its impact on business performance of service and non service sector of Malaysia and they concluded that relational capital has positive effect on service sector performance while human capital has positive impact on non service sector performance. Goh (2005) was conducted the study by using VAIC™ (Value Added Intellectual Coefficient) to measure the impact of IC i.e. (Human Capital Efficiency, Structural Capital Efficiency and Capital Employed Efficiency) on Malaysian domestic and foreign banks and argued that Human Capital Efficiency (HCE) in terms of value creation are more influenced both in domestic and foreign banks. He further explained that investment employed in human capital is more returnable than structural and physical capital. Mavridis (2005) was conducted study using VAIC™ model on seventeen commercial banks and concluded that Value Added (VA) and Physical capital has normal, strong and positive relation. Another study was conducted to measure the intellectual capital performance i.e. (HCE, SCE and CEE) and its impact on financial performance (ROE, EPS and ASR) of 150 listed companies in Singapore Stock Exchange by using VAIC™ model and concluded that IC performance has significant relation with firm's performance and its future performance (Tan et al. 2007). El-Bannany (2008) was conducted to measure the IC performance of U.K banks over the period 1999-2005 and argued that efficiency of U.K banks is based on human capital which means an efficient bank is more investing to create Human Capital Efficiency (HCE). Ahangar (2011) conducted the study by employing the VAIC™ to measure the intellectual capital performance and its impact on financial returns of Iranians companies. He concluded that Human Capital Efficiency (HCE) has significant and positive impact on financial returns of companies whereas the relationship of structural and physical capital was not significant with financial performance of companies. Saudah Sofia (2005) argued that IC has positive relation with financial performance of firms and same findings are supported by Riahi-Belkauui (2003) concluded that IC has positive and substantive influence on corporate performance of US multinationals. Another study reveals empirical results that (VAIC™) has positive and significant relation with financial, stock and economic performance of industries. He further concluded that VAIC™ has only significant relation with market performance of high tech

industries while they considered that Capital Employed Efficiency (CEE) is key determinant of financial and stock market performance (Zeghal and Maaloul 2010). Joshi, Cahill and Sidhu (2010) was conducted the study to measure the IC performance through VAIC™ model. They argued that Human Capital Efficiency (HCE) has positive and significant relation to increase the efficiency of Australian Owned banks rather than Structural Capital Efficiency (SCE) and Capital Employed Efficiency (CEE) which means more investment on human capital will increase the more efficiency of banks. Another study was conducted to measure the empirical relation between IC and financial performance of top 25 pharmaceutical firms using VAIC™ and concluded that (HCE) is more important than (SEC) and (CEE) to enhance the profitability and productivity of pharmaceutical industry Kamath (2008) and same findings is revealed by Yalama and Coskun (2007) by employing VAIC™ and DEA analysis over the period of 1995-2005 and concluded IC has positive effect on profitability of firms. Pew et al. (2007) examined the empirical relation of 150 firms listed in Singapore Stock Exchange and concluded that IC has a significant and positive relation with present and future financial performance of these firms. Another study was conducted to measure the IC performance of seventeen commercial banks of Bangladesh by employing the (VAIC ™) model and concluded that commercial banks have more Human Capital Efficiency (HCE) than Structural Capital Efficiency (SCE) and Capital Employed Efficiency (CEE) (Mohiuddin,Najibullah and Shahid 2006). As IC is recognized one of the important strategic asset during the last two decades. Maditinos et al. (2011) was attempted to investigate the empirical relation of IC with firms market and financial performance of 96 listed firms in Athens Stock Exchange and argued that only (HCE) has significant and substantive positive relation with financial performance (ROE) of firms. A study was conducted by Mavridis (2004) to explore the IC performance by employing the VAIC ™ model of Japanese banking sector for the year 2000-2001 and concluded that there is significant performance difference between Japanese and some other European banks. He further concluded that there is negative relation with Value Added (VA) and Human Capital (HC) which means misuse of human efficiency. Whereas another study revealed the empirical relation that human capital is more important than physical capital over the period of 1996 to 1999 of Greek banking system (Mavridis and Kyrmizoglou 2005). Kamath (2007) found empirical relation while conducting the study to measure the IC performance of Indian banks through VAIC™ methodology. He argued that foreign banks have more Human Capital Efficiency (HCE) while the public banks have more physical capital efficiency. Cabrita and Bontis (2008) was conducted the study to investigate the IC performance of 53 Portuguese banks using Structural Equasioning Model (SEM) and Partial Least Square (PLS) and examined that human capital positively affect the structural capital and relational capital which ultimately strengthen the banks performance. Goo and Tseng (2005) examined the empirical relation of IC performance and its impact on financial performance of 500 Taiwanese manufacturers using VAIC™. They explored that IC has positive substantive effect on financial performance. Laing, Dunn and Lucas (2010) examined the empirical relation of IC performance and financial performance of hotel industry of Australia over the period of 2004-2007 conducting VAIC™ methodology. They concluded that (ICE) Intellectual Capital Efficiency is based on Human Capital Efficiency (HCE) of hotel industry of Australia which positively encourages financial performance (ROA) of hotel industry. Ji-jian et al (2006) was conducted the study to measure the IC performance and its impact on financial performance of 32 automobiles companies listed in Shanghai Stock Exchange. The empirical findings revealed that all the determinants of VAIC™ have substantive effect on financial performance of 32 automobiles countries.

THEORETICAL FRAME WORK
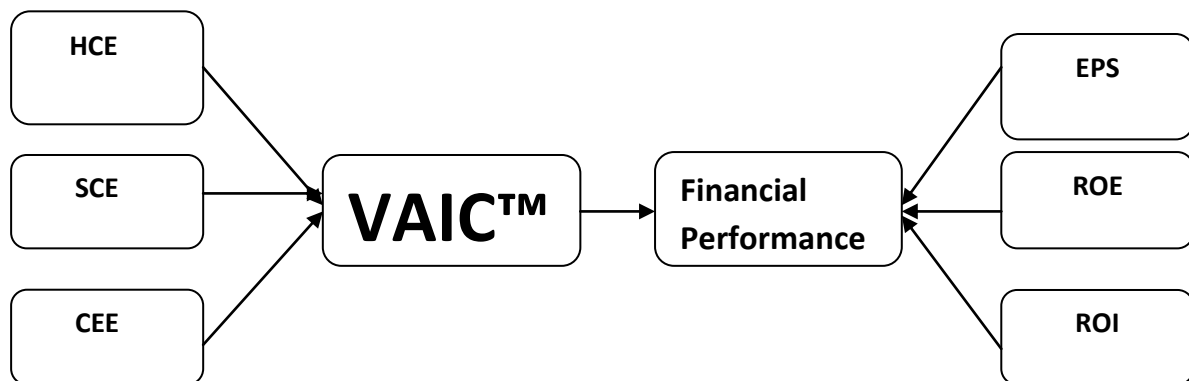
Source: Tan, Plowman and Hancock (2007)

RESEARCH OBJECTS

The purpose of this is to measure the IC performance of modaraba sector of Pakistan and its impact on financial returns. Our proposed objectives that financial performance of modaraba sector substantively affects if below mentioned hypotheses are true.

H1a: There is a positive relation between VAIC™ and financial performance (EPS, ROE and ROI) of modaraba companies.

H1b: There is a positive relation between Value Added (VA) and financial performance (EPS, ROE and ROI) of modaraba companies.

H1c: There is a positive relation between Human Capital Efficiency (HCE), Structural Capital Efficiency (SEC) and Capital Employed Efficiency (CEE) with financial performance (EPS, ROE and ROI) of modaraba companies.

METHODOLOGY

Value Added Intellectual Coefficients (VAIC™) is very important and consistent approach. VAIC™ is a component of Human Capital Efficiency (HCE), Structural Capital Efficiency (SCE) and Capital Employed Efficiency (CEE) which is develop by Public in Austrian IC Research Centre. Therefore it is also known as Austrian Approach. Pulic used this approach in its numerous studies (2000, 2001 and 2004). This methodology is being use in many countries like Austria, Australia, China, Japan, Malaysia, U.S.A, U.K, India and Pakistan etc by many researchers (Abdul Aziz, Shawqi and Nick 2010; Bontis et al. 2000; Goh 2005; Mavridis 2005; Kujansivu and Lonnqvist 2005; El-Bannany 2008; Ahangar 2011; Kamath 2008; Pew et al. 2007; Diez, Ochoa, Preito and Santidrian 2010; Joshi, Cahill and Sidhu 2010; Zeghal and Maaloul 2010; Riahi-Belkauui 2003; Mohiuddin,Najibullah and Shahid 2006; Mohiuddin,Najibullah and Shahid 2006; Maditinos et al. 2011; Makki,Lodhi and Rahman 2008; Mavridis 2004; Cabrita and Bontis 2008; Kamukama, Ahiauzu and Ntayi 2010; Goo and Tseng 2005; Laing, Dunn and Lucas 2010 etc. The VAIC ™ is used as a measure to evaluate the efficiency of corporations.

- Output = Net Premium
- Input= Operating expenses (excluding personal costs).
- Value added =Output-Input.
- HC =personal cost (Salaries and Wages), considered as an investment.
- CA= Capital employed (both physical and financial capital).
- SC= VA–HC
- HCE =VA/HC (Human Capital Efficiency).
- CEE= VA/CA (Capital Employed Efficiency).
- SCE=SC/VA

VAIC™ = HCE + CEE + SCE

RESEARCH MODELS

We have the following proposed research models in order to empirically test the relation of IC with financial performance of modaraba companies.

$$ROE=\alpha+\beta (VA) +\mu ……. (1)$$

$$ROI=\alpha+\beta (VA) +\mu ……. (2)$$

$$EPS=\alpha+\beta (VA) +\mu ……. (3)$$

$$ROE=\alpha+\beta (VAIC™) +\mu ……. (4)$$

$$ROI=\alpha+\beta (VAIC™) +\mu ……. (5)$$

$$EPS=\alpha+\beta (VAIC™) +\mu ……. (6)$$

$$ROE=\beta_0+\beta_1 (HCE) +\beta_2 (SCE) +\beta_3 (CEE) +\mu …….. (7)$$

$$ROI=\beta_0+\beta_1 (HCE) +\beta_2 (SCE) +\beta_3 (CEE) +\mu …….. (8)$$

$$EPS=\beta_0+\beta_1 (HCE) +\beta_2 (SCE) +\beta_3 (CEE) +\mu …….. (9)$$

Ranking of VAIC™ and VA

Sr.	Modaraba Companies	VAIC™	VAIC™ (Ranking)	VA Million Rs.	VA (Ranking)
1	First Punjab Modaraba	77.42682574	1	976.445	2
2	First Habib Modaraba	48.67802743	2	1328.923	1
3	Standarad Charatered Modaraba	29.67838359	3	832.273	3
4	First UDL Modaraba	23.7299414	4	91.47	4
5	Trust Modaraba	14.20562916	5	57.381	7
6	First Elite Capital Modaraba	10.29399449	6	39.77	9
7	B.F. Modarab	8.13983596	7	10.983	10
8	KASB Modaraba	7.421342013	8	74.89	5
9	First IBL Modaraba	6.97360054	9	55.38	8
10	First Imrooz Modaraba	6.681986788	10	65.135	6
11	Modaraba AL-Mali	-0.6614004	11	9.085	12
12	Allied Rental Modaraba	-15.9896216	12	9.53	11

Table: 1

The VAIC™ is a key methodology for measuring the IC performance of modaraba sector. The VAIC™ is comprised of (HCE, SCE and CEE). With regard to VAIC™ the best efficient company is First Punjab Modaraba (VAIC™ = 77.43) followed by First Habib Modaraba (VAIC™ =48.68) and Standard Charatered Modaraba (VAIC™ =29.68). The least efficient modaraba company is Allied Rental Modaraba where (VAIC™ = -15.99). The VAIC™ =77.43 means for every PKR one invested by First Punjab Modaraba would create value of 77.43 which is the highest efficient modaraba company in selected sample. It created the value of 976.445 Million Rupees and ranked as second most efficient modaraba company with respect to (VA) creation. Whereas the best efficient company with respect to (VA) creation is the First Habib Modaraba Company has the (VA) creation efficiency of 1328.923 Million Rupees. So far the least efficient company is the Modaraba Al-Mali creating the VA efficiency of 9.085 Million Rupees.

Modaraba Companies	EPS	ROI %	ROE(%)	VAIC	HCE	SEC	CEE	Input	Out put	VA=Output-input
Allied Rental Modaraba	4.63	20	26	-15.9896216	0.058635329	-16.0545645	0.006307624	328.67	338.2	9.53
First Punjab Moaraba	0.21	0.263	1.9	77.42682574	76.04711838	1.013324962	0.366382399	13.82	990.265	976.445
Trust Modaraba	0.79	6.305	8.368	14.20562916	12.96745763	1.083559937	0.154611592	4.524	61.905	57.381
First UDL Modaraba	1.92	6.199	8.735	23.7299414	22.54066042	1.046423832	0.142857143	11.38	102.85	91.47
Standarad Charatered Modaraba	1.76	3.229	8.602	29.67838359	28.4110398	1.036481651	0.230862134	17.45	849.723	832.273
Modaraba AL-Mali	-0.7	-5.187	-6.486	-0.6614004	0.556406173	-1.25431451	0.036507937	52.415	61.5	9.085
KASB Modaraba	0.6	1.792	6.221	7.421342013	6.148604269	1.194227396	0.078510348	12.41	87.3	74.89
First IBL Modaraba	0.1	0.547	0.838	6.97360054	5.610942249	1.216875412	0.145782879	4.82	60.2	55.38
First Imrooz Modaraba	9.52	12.7	25.47	6.681986788	5.174372418	1.239556968	0.268057402	12.933	78.068	65.135
First Habib Modaraba	1.33	7.083	9.246	48.67802743	47.30441747	1.021596212	0.352013747	19.72	1348.643	1328.923
B.F. Modarab	0.5	11.382	11.654	8.13983596	6.864375	1.170521155	0.104939805	0.93	11.913	10.983
First Elite Capital Modaraba	0.65	4.721	6.22	10.29399449	8.911046381	1.126405529	0.256542578	8.408	48.178	39.77

Table:2

Performance Components of VAIC™

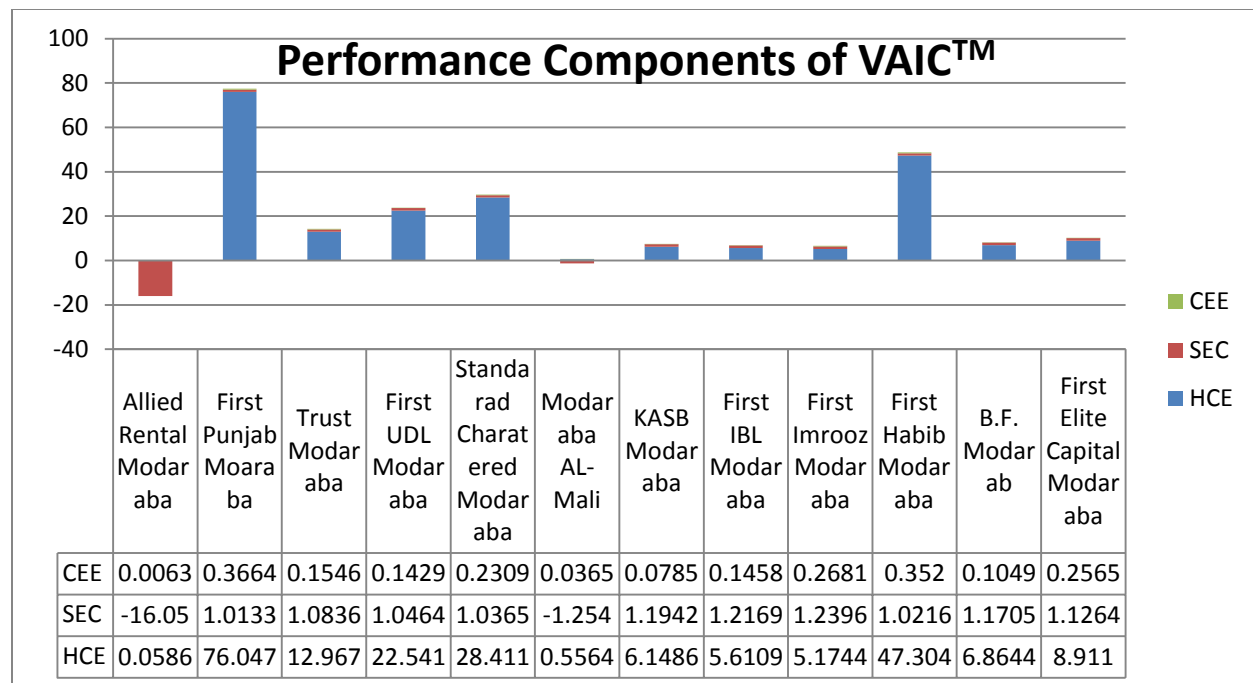|	Allied Rental Modaraba	First Punjab Moaraba	Trust Modaraba	First UDL Modaraba	Standarad Charatered Modaraba	Modaraba AL-Mali	KASB Modaraba	First IBL Modaraba	First Imrooz Modaraba	First Habib Modaraba	B.F. Modarab	First Elite Capital Modaraba
CEE	0.0063	0.3664	0.1546	0.1429	0.2309	0.0365	0.0785	0.1458	0.2681	0.352	0.1049	0.2565
SEC	-16.05	1.0133	1.0836	1.0464	1.0365	-1.254	1.1942	1.2169	1.2396	1.0216	1.1705	1.1264
HCE	0.0586	76.047	12.967	22.541	28.411	0.5564	6.1486	5.6109	5.1744	47.304	6.8644	8.911

Figure: 1

Performance Components of VAIC™
Table: 2 and figure: 1 show the performance components of VAIC™ which are HEC, SCE and CEE. All the Moradabad companies having better performance of HEC relatively to SCE and CEE. First Punjab Modaraba Company having the best performance of VAIC™ as well HCE followed by First Habib Modaraba and the least VAIC™ performer company is Allied Rental Modaraba Company.

Dependent / Independent	ROE			ROI			EPS		
	M1	M2	M3	M1	M2	M3	M1	M2	M3
Constant	9.676	11.002	0.447	6.459	7.432	0.885	2.012	2.286	-1.093
VA	0.681			0.603			0.678		
VAIC™		.326			0.272			.432	
HCE			0.099***			.174			0.059***
SCE			0.066***			.132			0.042**
CEE			0.027**			.022**			0.085***
R²	0.018	0.097	0.531	0.028	.119	.534	.018	0.063	0.478
Adj. R²	-0.081	.006	0.355	-0.069	0.031	.359	-.080	-0.031	.283
F- Statistic	0.179	1.069	3.022	0.288	1.353	3.057	.183	0.669	2.444
Prob. (F- Stat)	0.681	.326	.094	0.603	.272	.092	.678	0.432	.139

Table: 2   *, ** and *** presents significance level at 1%, 5% and 10% respectively.

Empirical Results and Analysis
The table 2 reveals the empirical relation of all the proposed research models. Basically we have three proposed models of ROE, ROI and EPS (M1:M2:M3) each respectively. The Proposed model (M3) for (ROE) and (M3) for (EPS) show that HCE, SCE and CEE has significant relation with financial performance of modaraba companies at (P>0.05) and (P> 0.10) respectively. The more investment on efficient people means more Human Capital Efficiency (HCE) which means better financial performance and more investment on structural capital and physical

capital also represents better financial performance of modaraba companies. The value of R^2 is .531 which means 53% change in target variable (ROE) is due to predictor variables i.e. (HCE, SCE and CEE). Whereas the value of R^2 is 0.48 for proposed model (M3) of (EPS) indicating the 48% change in target variable (EPS) is due to predictor variable i.e. HCE, SEC and CEE. The proposed model (M3) for (ROI) represents that only Capital Employed Efficiency (CEE) has significant relation with financial performance (ROI) of modaraba companies at ($P>0.05$).

CONCLUSION

VAIC™ is considered a key methodology for measuring the IC performance of modaraba companies. The table:1 predicts that one of the important components for measuring the IC is Human Capital Efficiency (HCE) which means more investment injected on efficient employees means more Human Capital Efficiency (HCE) which is also supported by empirical results that (HCE) has a significant relation with financial performance (REO and EPS) of modaraba companies. Whereas the remaining two components of VAIC™ i.e. (SCE and CEE) are also worth full having a significant relation with financial performance of modaraba companies. So First Punjab Modaraba is most efficient company in selected sample with more VAIC™ and HCE.

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