International Journal of Trade and Commerce-IIARTC
July-December 2015, Volume 4, No. 2 pp. 267-282
ISSN-2277-5811 (Print), 2278-9065 (Online)

Accounting for Intellectual Capital and its Relationship with Academic Performance

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Abstract

The concept of Intellectual capital had drawn up the attention of many researchers and it is observed that the growing interest in intellectual capital has been shifted from business environments to higher educational environments due to the fact that educational sectors are considered as centers of innovations and production of innovative human capital. The present study aims to examine the effectiveness of intellectual capital and academic performance in the selected academic colleges in Prince Sattam bin Abdulaziz University (PSAU) and exploring the relationship between the components of intellectual capital and academic performance. For this purpose the author has selected PSAU as a case study and chosen 4 academic colleges. The data was collected through a questionnaire by conducting face-to-face interview. Various statistical methods were used to analyze the data. The study came up with the main findings, that the Intellectual capital in PSAU was managed effectively. Furthermore, the academic performance indicators are also well effective in the academic colleges in PSAU and finally intellectual capital and academic performance have had a significant positive correlation. This evidence shows that all the three components i.e; Human capital, Relational capital and Structural capital show a significant relationship with academic performance but among the three components, the relation of human capital is more prominent.
Keywords: *Human Capital, Relational Capital, Structural Capital, Academic Performance.*

PAPER/ARTICLE INFO
RECEIVED ON: 30/08/2015
ACCEPTED ON: 03/12/2015

Reference to this paper should be made as follows:

Alaa Mohamad Malo Alain (2015), "Accounting for Intellectual Capital and its Relationship with Academic Performance", *Int. J. of Trade and Commerce-IIARTC*, Vol. 4, No. 2, pp. 267-282

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1. INTRODUCTION

No doubt the success of business organization during the fifties of the last century was mainly due to the size of investment incurred in tangible assets because the economic activities of these organizations were characterized by the productivity of these assets, the large size of factories as well as the big number of manpower. This situation started to recede as knowledge became the fundamental principle of the success and the development of any organization. Knowledge actually provides an atmosphere for creativity and innovation which leads to achieve "Value Added" for the organizations, products, services offered and further strengthen the competitive position of the organization.

Based on the above, the human element has become the basic source for the development of business organizations as knowledge is related to this element. When the organizations take enough care of human capital by providing an appropriate atmosphere, there would be scope for more creativity and innovation. The human capital is considered as the leader for the success of any organization who can transform the knowledge to a value and to a competitive advantage. This means that the center of gravity in generating the value has shifted from utilizing the natural resources (tangible) to the utilization of intellectual assets (intangible) and from the law of diminishing returns (which apply to the physical goods) to the law of increasing returns - with respect to the knowledge and ideas – (Al Rousan & Al Ajloony,2010).

Now a days, both profitable and non-profitable organizations are trying to get the maximum benefits from managing their intellectual capital i.e. (Human, relational, and structural) in a way to get distinguished over their competitors and to get performance improvement. And ultimately once performance improvement is achieved in the organization this will lead to overall country's economic development.

Indeed, various literatures show the impact of intellectual capital over organizations and their performance (Shehzad, et.al, 2014; Fathi, et al., 2013; Awan & Saeed,2015; Mondal & Ghosh, 2012). Whereas the present study is focused on the effectiveness of intellectual capital in education sector in the kingdom of Saudi Arabia. This study is important and unique as still the concept of intellectual capital is not common in education sector of Saudi Arabia. Moreover, case studies and authentic researches in regards to Intellectual Capital (IC) are not yet available according to the researcher's point of view. The study proposed a "Model" containing a number of indicators designed based on several previous studies (Meihami, Karami, 2014; Córcoles, Ramírez,2013; Sharabatia et al., 2013) in order to measure the effectiveness of IC and academic performance in the selected academic colleges in PSAU.

2. RESEARCH STATEMENT

The research statement can be expressed by the fact that many Saudi Universities are overlooking the concept and importance of intellectual capital being an important and effective source to achieve the vision, mission and strategic objectives of these universities with efficiency and effectiveness. Therefore, the research statement can be summarized by the following questions:

i. To what extent is the intellectual capital with its different components is effective in the academic colleges in PSAU?
ii. To what extent is the academic performance indicators are effective in the academic colleges in PSAU?

iii. Is there any relation between the intellectual capital and the effectiveness of academic performance in the selected academic colleges in PSAU?

3. RESEARCH SIGNIFICANCE

The research derives its significance from the fact that most of the literatures made in IC was relating to Middle East region either in industrial or business or services sector, whereas in educational sector, there isn't any study found. Furthermore, the study will present a set of indicators to measure the level of effectiveness of IC and its impact on academic performance; this will contribute to large extent to report about IC in PSAU, so necessary measures can be taken.

4. RESEARCH OBJECTIVES

The crux of this study was to examine the effectiveness of Intellectual Capital (IC) and Academic Performance in the selected academic colleges in PSAU and exploring the Relationship between the components of Intellectual Capital and Academic Performance.

5. RESEARCH METHODOLOGY

In order to achieve the previously mentioned objectives, this study depends on descriptive and analytical approach. The purposive sample (teaching staff) was specifically selected from four colleges in the main campus of PSAU i.e. College of Business Administration, Science College, Engineering College, and Pharmacy College. Accordingly, a questionnaire survey was send to the respondents (teaching staff) which requires them to rate their attitudes based on given dimensions using a 5-point Likert Scale ranging from 1 (strongly disagree) to 5 (strongly agree). The data had been collected and analyzed by using the Statistical Package for Social Sciences (SPSS) software. One sample t test had been conducted to examine the first and second hypothesis. In regard to the third hypothesis a correlation model had been employed to examine the relation between the independent variables (Intellectual Capital) and the dependent variable (academic performance).

6. RESEARCH INSTRUMENTS

The survey instrument developed by the researcher consist of three parts, this instrument has been designed for teaching staff who are working in four academic colleges relating to the Prince Sattam Bin Abdulaziz University. Part one of the questionnaires asked for demographic data contained 5 questions. The second part included questions regarding the effectiveness of intellectual capital in the university consisted of three main sections, section 1 measuring human capital effectiveness contained (1-13) dimension, section 2 measuring relational capital effectiveness contained (14-27) dimension, section 3 measuring structural capital effectiveness contained (28-42) dimension. Part three sought information regarding the effectiveness of academic performance indicators contained (43-70) dimensions.

The development of the survey instrument included an evaluation from four examiners from different universities in the kingdom of Saudi Arabia, who are interested in the research problem. Based on their feedback, several revisions and modifications have been made in regard to adding or deleting some statements or rewriting the statement in different way. The final draft of the survey was then distributed to the selected sample. Usable responses were received from 180 faculty members out of 220, yielding an overall response rate of 81.8 percent. The measured value

of "Cronbach's Alpha" done by SPSS Software is approximately equal to 0.771, therefore, the test is good and shows data is fairly reliable.

7. RESEARCH HYPOTHESES

The research based on the examination of following hypotheses:

i. The components of Intellectual capital are managed effectively in PSAU.
ii. The academic performance indicators are well effective in the selected academic colleges in PSAU.
iii. The components of intellectual capital are positively related to academic performance in PSAU.

8. LIMITATIONS

i. This study doesn't take into account all affiliated colleges relating to Prince Sattam bin Abdulaziz University due to the distance and limited resources.
ii. The study main findings are based on teaching staff perspective in regard to IC, therefore, students and employee's perspective should also be included and taken into considerations .

9. LITERATURE REVIEW

The IC is generally associated with "human capital" or "knowledge." The terms Intangible Assets, Knowledge Assets/Capital or Intellectual Assets/Capital are mostly used as synonyms (Ulmer. M.,2003). We can find the term Intangible Assets in the accounting literature and the economists use the term Knowledge Assets while the management and legal literature is using Capital Intellectual but in fact all indicate to the same thing. It is worth mentioning that presently there are several concepts of "Intellectual Capital" such as "Intellectual Capital", "Intangible Capital" etc. And all of these concepts are opposite to the concept of Physical Capital i.e. the intellectual assets are opposite to physical assets. We can differentiate between the two through following table (Table No. 1):

Table No (1): the comparison between the physical and intellectual capital

Statement	Physical Capital	Intellectual Capital
*Core Advantage	Tangible Physical	Intangible – Ethereal – Intangible
*Existing Place	Within the internal environment of company	In minds of individuals working in company
*Model of Representation	Machines, Equipment, Building	Experts and Knowledgeable Individuals
Value	Declining and Disappearing	Increasing Innovation
*Pattern of creating wealth	physical use	Focus, attention and broad imagination
*Its users	Muscle Work	Cognitive Work
*Operational Reality	Stops when problems occur	Gets angry when problems occur
*Life/Period	It has a productive life and its energy decreases	It is ageless and its innovative abilities increase

Broadly speaking, we cannot find a specific definition of Intellectual Capital but different authors interpret this concept in different way. However, some individual companies create quite specific descriptions of Intellectual Capital in order to use them within a specific industry. In this context, Stewart, T. A., 1991) defines intellectual capital as intellectual material – knowledge, information, intellectual property and experience – that can be put to use to create wealth. On the other hand, Edvinsson and Malone, (1997) describe Intellectual Capital as it encompasses the applied experience, organizational technology, customer relationships and professional skills that provide the company with a competitive advantage in the market. Some authorities defend that, intellectual capital is the end outcome of knowledge transformation process. Roos, & Fernstrom, 2005) define Intellectual Capital as all non-monetary and non-physical resources that are fully or partly controlled by the organization and that contribute to the organization's value creation.

10. REPORTING OF INTELLECTUAL CAPITAL

Accounting nowadays receives criticism for not reporting the accurate value of enterprises on financial statements (Roslender & Fincham, 2004). For this reason the international regulatory bodies, like the Financial Accounting Standards Board (FASB) (2004) or the International Accounting Standards Board (IAS) (2005) tend to recommend that additional information on intangibles to be published apart from financial statements so as to avoid the inclusion of accounting criteria which could endanger the quality and reliability of the financial information.
However, Management Accounting Guidelines (MAG), which is published by American Institute of Certified Public Accountants (AICPA), provides simple practical tools and techniques that help the managers and accountants to gain the necessary management and accounting skills for successful management of intellectual capital of their organizations (Corcoles, Ramírez, 2013).

11. METHODS OF MEASURING THE INTELLECTUAL CAPITAL

There are a set of methods to measure the "Intellectual Capital" which can be utilized in the process of evaluation of these assets. According to Luthy, D.H. (1998) & Williams (2001) IC methods can be divided into four main groups:

i. **Direct Intellectual Capital Method (DICM) –** This method can be applied by assessing the dollar value of intangible assets through ascertaining their different influential factors. However, once those components are identified and settle down, it can be evaluated directly or either by individual or by applying through the statistical means, i.e., aggregated coefficient.
ii. **Market Capitalization Method (MCM) –** This method evaluates the actual values and difference in terms of company's share of market capitalization and its stockholder's equity participation, as to know the core value of organization's intellectual capital or intangible assets.
iii. **Return on Assets Method (ROA)-** To measure ROA**,** the average earnings of a company before tax and dividend by dividing them the average tangible assets of the company, while, to make a comparison the result is a company ROA with its industry average. Moreover, the difference is multiplied by the company's average tangible assets to ascertain average annual earnings from all intangibles. Thereafter, by dividing the above-average earnings by the

company's weighted average cost of capital or an interest rate. It can be derived easily to estimate the value of organizational intangible assets or intellectual capital.

iv. **Scorecard Method (SC)** –In this method after the process of identifies various mechanism of intangible assets or intellectual capital through the consideration of indicators and indices are generated and reported in scorecard or through graphs. Likewise, SC method is parallel to DIC method, with an exemption of none inclusion of the dollar value of intangible assets estimate is being considered in DIC.

v. **"Bontis" Intellectual Capital Method**: "Nick Bontis" has classified intellectual capital measurement into three different categories; "Human Capital", "Structural Capital" and "Relational Capital" or "Customer Capital". He has also assigned classification and different indicators for each of them (Bontis,1998; Sharabati, et.al, 2010).

The roots and arguments related to intellectual capital date back to 1960s and the discussions about human capital investments date back to 1990s. However, intellectual capital is considered as a hot topic among researchers and concerned institutions, and particularly when it comes to relevant practices, reporting, measurement of IC and profit resulting from IC on financial statements i.e. income statement & balance sheet (Holland, J., 2006). Moreover, non-disclosure of intellectual capital in addition to not showing innovation and knowledge on financial statements stands as a big hindrance in the way of presenting the real value of enterprises. In this context, it's worth mentioning to say that answers to many questions are still non-existent (Marr and Moustaghfir, 2005), But, the present strict requirements by International Accounting Standards (IAS) also lead the emphasized questions to remain unanswered. Accounting is based on objectivity, consistency, verifiability and comparability rules. Thus, there is no room for subjectivity and alteration of financial-accounting information by managers (IASB, 2010). However, there is a vital necessity to report intangibles and show the real value of organizations to investors and other parties (Moolman, S. ,2011).

There are various studies such as (Bontis, 1998; Ghen, et al, 2004 ; Karabay, M., 2011) which focused only on measurement and disclosure of intellectual capital and there are some studies which discussed only the relation of intellectual capital with the financial performance of organizations (Gruian, 2011 ; Marr, 2004; Mention, 2012; Meihami, Karami,2014;Ranani & Bijani, 2014) .

As regards to intellectual capital in universities Meihami & Karami, (2014) came up with a conclusion that the intellectual capital reporting on performance of Islamic Azad University (financial performance, Educational performance and research function) has a positive effect. On the other hand, Córcoles, Ramírez, (2013) emphasized that it is very important for Spanish Public universities to provide information on their intellectual capital in order to satisfy their stakeholders' information needs**.** Moreover, Wen-Min Lu, (2012) proves that the regression analysis indicates that intellectual capital does play an important role in influencing teaching and research efficiency. In Italian context - Palumbo and Berardino, (2012) show in their research a significant correlations among size of university, financial resources, teaching load, mobility and scientific performance and suggests an integration of ICU report.

In Iranian Context – Sheikhali and Karimi, (2014) came up into conclusion that there were significant relationships between intellectual capital and its components, knowledge management

and its components and organizational innovation. The results showed that knowledge management has acted as a mediator variable in the relationship between intellectual capital and organizational innovation. Intellectual capital has a direct effect with the impact factor of 0.48, and also indirectly with the impact factor of 0.25 on organizational innovation. A great efforts made by Sa´nchez,et.al., (2009) as he suggested certain indicators to present an IC report specially designed for universities. His research came up with a conclusion that there are a set of challenges in relation to establishing standards for universities.

12. ANALYSIS AND FINDINGS

i. Characteristics of Respondents

The present survey study targeted teaching staff who are working in four colleges at PSAU. Table 2 shows clearly that the majority of respondents were from College of Business Administration, working as academic, with a designation Assistant Professor having experience more than 10 years. These data proves up to some extent that the respondents are well acquainted and qualified to answer the questionnaire statements effectively.

Table 2: Characteristics of Selected Respondents

S.No	Variable	Particulars	Frequency	Percent
1	**Colleges**	College of Business Administration	58	32.2
		Science College	23	12.8
		Engineering College	43	23.9
		Pharmacy College	56	31.1
2	**Sex**	Male	119	66.1
		Female	61	33.9
4	**Designation**	Professor	14	7.8
		Associate Professor	27	15
		Assistant Professor	129	71.7
		Lecturer	10	5.5
5	**Years of Experience**	Less than 5	24	13.3
		5-10 years	63	35.0
		More than 10	93	51.7

ii. Human Capital Effectiveness

Table 3 presents the summary found descriptive statistics pertaining to Human Capital effectiveness. Respondents were asked to indicate their perceptions regarding the degree of effectiveness concerning to Human Capital. Table 2 shows that all dimensions are being effective and received above average (3) rating. The dimensions rated high were mostly: "Level of professional and academic rehabilitation of faculty members" "Honoring the innovators and those who are considered to be distinguished for their works" (Means are 3.96 and 3.79 respectively). The dimensions rated as least were " Level of scientific production of faculty (researches, authoring books, translations)" Level of "Academic Service Period" in the college (faculty turnover) (Means =3.19 and 3.32 respectively). Table 3 shows that the overall mean for all the dimensions was 3.56 and the standard deviation for all dimensions was relatively low (Std=0.87) indicating that there is no dispersion in responses and respondents agree on the

perceived dimensions. Therefore, it can be concluded that there is an effectiveness in regards to human capital.

Table 3: Descriptive Statistics for the Human Capital effectiveness

S.No	Dimensions	Mean	Std.	t	Sig
1	Level of effectiveness of strategic leadership for college management	3.67	0.82	10.92	0.00
2	Level of professional and academic rehabilitation of faculty members	3.96	0.82	15.55	0.00
3	Level of professional rehabilitation of administrative staff	3.36	0.86	5.57	0.00
4	Level of quality of scientific research outputs	3.38	0.85	5.94	0.00
5	Level of scientific production of faculty (researches, authoring books, translations)	3.19	0.86	3.04	0.00
6	Level of effectiveness of coordination and functional as well as academic cooperation	3.45	0.94	6.46	0.00
7	Level of ability of faculty members to participate in decision making processes	3.78	0.87	12.01	0.00
8	Value added for creativity and innovation of faculty members	3.50	0.91	7.35	0.00
9	Value added for training and development of faculty member	3.60	0.91	8.82	0.00
10	Consistency of culture and attitudes of faculty with the values of University	3.72	0.83	11.73	0.00
11	Level of concern about complaints and suggestions relevant to the development of "work environment"	3.57	0.90	8.41	0.00
12	Honoring the innovators and those who are considered to be distinguished for their works	3.79	0.90	11.72	0.00
13	Level of "Academic Service Period" in the college (faculty turnover)	3.32	0.83	5.21	0.00
	Overall Average	**3.56**	**0.87**	**8.67**	**0.00**

iii. Relational Capital Effectiveness

Table 4 presents the summarized descriptive statistics pertaining to Relational Capital Effectiveness. Respondents were asked to indicate their perceptions regarding the degree of effectiveness concerning to Relational Capital. Table 3 shows that all dimensions are being effective and received above average (3) rating except dimension Number 25. The dimensions rated high were mostly: "Level of effectiveness of relation with other Educational Institutions" "Level of number of students registered annually" (Means are 3.85 and 3.71 respectively). The dimensions rated as least were "Level of number of students withdrew annually" "Level of effectiveness of relation with business and financial environment" (Mean =2.54 and 3.32 respectively). Table 4 shows that the overall mean for all the dimensions was 3.49 and the

standard deviation for all dimensions was relatively low (Std=0.81) indicating that there is no dispersion in responses and respondents agree on the perceived dimensions. Therefore, it can be concluded that there is effectiveness in regards to relational capital.

Table 4: Descriptive Statistics for the Relational Capital Effectiveness

S.No	Dimensions	Mean	Std.	t	Sig
14	Level of effectiveness of relation with business and financial environment	3.32	0.69	6.26	0.00
15	Level of effectiveness of relation with local community	3.44	0.87	6.80	0.00
16	Level of effectiveness of relation with other Educational Institutions	3.85	0.83	13.76	0.00
17	Level of research publications for the development of local community	3.53	0.81	8.78	0.00
18	Level of effectiveness of research partnerships	3.58	0.88	8.92	0.00
19	Level of effectiveness of students' activities (social, cultural, sport etc.)	3.68	0.80	11.44	0.00
20	Level of satisfaction of students	3.58	0.90	8.67	0.00
21	Effectiveness of support and services provided to the students	3.63	0.84	10.04	0.00
22	Level of follow up of graduate students	3.46	0.80	7.64	0.00
23	Level of satisfaction of Saudi labor market (Level of skills and knowledge required by labor market from students)	3.52	0.83	8.46	0.00
24	Level of number of students registered annually	3.71	0.84	11.42	0.00
25	Level of number of students withdrew annually	2.54	0.62	-9.870	0.00
26	Level of awareness in regard to the concept of social responsibility towards local community	3.44	0.89	6.60	0.00
27	Level of academic reputation of College's graduates	3.57	0.75	10.27	0.00
	Overall Average	**3.49**	**0.81**	**9.16**	**0.00**

iv. Structural Capital Effectiveness

Table 5 presents the summarized descriptive statistics pertaining to Structural Capital Effectiveness. Respondents were asked to indicate their perceptions regarding the degree of effectiveness concerning to Structural Capital. Table 5 shows that all dimensions are being effective received above average (3) rating. The dimensions rated high were mostly: " Level of effectiveness of facilities and resources which support the scientific research " " Level of effectiveness of facilities and resources which support the academic and professional rehabilitation " (Means are 3.84 and 3.83 respectively). The dimensions rated as least were " Level of efficiency of database for graduate students " " Level of achievement and efficiency of administrative processes " (Means =3.22 and 3.27 respectively). Table 5 shows that the overall mean for all the dimensions was 3.61 and the standard deviation was relatively low (Std=0.83)

indicating that there is no dispersion in responses and respondents agree on the perceived dimensions. Therefore, it can be concluded that there is an effectiveness in regards to Structural Capital.

Table 5: Descriptive Statistics for the Structural Capital Effectiveness

S.No	Dimensions	Mean	Std.	t	Sig
28	Level of effectiveness of organizational structure	3.67	0.84	10.68	0.00
29	Level of efforts made by the University to establish good and positive relations among its employees / faculty	3.68	0.80	11.44	0.00
30	Level of effectiveness of facilities and resources which support the academic and professional rehabilitation	3.83	0.80	13.94	0.00
31	Level of effectiveness of facilities and resources which support the scientific research	3.84	0.73	15.34	0.00
32	Level of effectiveness of extracurricular, cultural and research activities	3.77	0.80	12.89	0.00
33	Level of effectiveness of support provided to encourage innovation and development in the educational process	3.64	0.83	10.32	0.00
34	Level of support provided from the University for scientific research	3.81	0.84	12.87	0.00
35	Level of support provided to experience holders and innovators	3.68	0.92	9.98	0.00
36	Providing appropriate environment to generate the ideas and share them in friendly meetings	3.68	0.89	10.33	0.00
37	Level of efficiency of internal network (Information Network)	3.59	0.83	9.51	0.00
38	Level of achievement and efficiency of administrative processes	3.27	0.84	4.33	0.00
39	Level of mutual support and coordination between Academic Departments	3.59	0.87	9.08	0.00
40	Level of efficiency of database for existing students	3.59	0.80	10.02	0.00
41	Level of efficiency of database for graduate students	3.22	0.87	3.35	0.00
42	Level of implementation of College's strategic plan	3.30	0.86	4.69	0.00
	Overall Average	**3.61**	**0.83**	**9.92**	**0.00**

v. Effectiveness of the Components of Intellectual Capital

Table 6 reports the summarized descriptive statistics pertaining to the effectiveness of Intellectual capital components in the academic colleges relating to PSAU, it is clear from the table that all components tends towards highly effectiveness and registered above average (3) rating . The components rated high were mostly the "Structural Capital" (Mean=3.62). The component rated as least was "Relational Capital" (Mean =3.51). The overall mean for all the components was (3.57) which tend to highly agreeing with regard to the effectiveness of intellectual capital. On the other hand, the standard deviation for all components was relatively low (Std=0.26) indicating that

there is no dispersion in responses and respondents agree on the perceived effectiveness. Based on Table 6, considering T value = 40.06 and sig = 0.000 (<) 0.05, therefore, the first hypothesis is confirmed. Hence we can conclude that the components of Intellectual capital are well effective in the selected academic colleges in PSAU.

Table 6: Summarized Statistics for the effectiveness of Intellectual capital components in PSAU

Variable	Mean	Std.	t	Sig
Human Capital	3.56	0.30	25.12	0.00
Relational Capital	3.51	0.26	26.46	0.00
Structural Capital	3.62	0.26	31.98	0.00
Overall Average	**3.57**	**0.26**	**29.33**	**0.00**

vi. Academic Performance Indicators

Table 7 presents the summarize form of descriptive statistics pertaining to Academic performance indicators APIs. Respondents were asked to indicate their perceptions regarding the degree of effectiveness of the APIs. Table 7 shows that all APIs are being effective and received above average (3) rating. The APIs rated high were mostly: " Appropriateness of Learning Resources " "Quality of Infrastructure (Labs, Building, Lecture Halls)" (Means are 3.86 and 3.81 respectively).The APIs rated as least was " Level of concern about granting"Appreciation Certificates" for completion of assigned tasks " Faculty awareness level about the mission of the college and their support to accomplish the mission" (Means =3.23 and 3.42). Table 7 shows that the overall mean for all APIs was 3.57 and the standard deviation for all APIs was relatively low (Std=0.82) indicating that there is no dispersion in responses and respondents agree of the effectiveness of the APIs . Based on Table 7, considering T value = 9.25 and sig = 0.000 (<) 0.05, therefore, the second hypothesis is confirmed. Hence, we can conclude that the academic performance indicators are well effective in the selected academic colleges in PSAU.

Table 7: Descriptive Statistics for the Academic Performance Indicators

S.No	Dimensions	Mean	Std.	t	Sig
43	Faculty awareness level about the mission of the college and their support to accomplish the mission.	3.42	0.84	6.62	0.00
44	Level of efficiency of students	3.44	0.74	7.95	0.00
45	Effectiveness of Organizational Structure	3.56	0.72	10.48	0.00
46	Quality of Educational Process	3.48	0.86	7.50	0.00
47	Quality of Faculty Members	3.77	0.71	14.49	0.00
48	Consistency of "learning outputs" with the National Qualifications Framework (NQF)	3.48	0.76	8.55	0.00
49	Rate of employment of Graduates	3.62	0.90	9.21	0.00
50	Appropriate level of "students supporting services" for the college.	3.64	0.87	9.95	0.00
51	Appropriateness of Learning Resources	3.86	0.79	14.64	0.00
52	Quality of Infrastructure (Labs, Building, Lecture Halls)	3.81	0.89	12.13	0.00

53	Appropriateness of the process of "Attracting Faculty Members"	3.73	0.82	11.96	0.00
54	Quality of "Scientific Research Outputs"	3.58	0.80	9.63	0.00
55	Effectiveness of relation between the Program, Faculty and the Community	3.53	0.87	8.16	0.00
56	Level of salaries and incentives offered to the experienced and distinguished faculty members	3.34	0.79	5.74	0.00
57	Level of concern about the complaints and suggestions provided to improve the work environment	3.70	0.80	11.68	0.00
58	Level of authoring and translation of books.	3.29	0.81	4.88	0.00
59	Level of assigning the tasks and new challenges related to the work	3.52	0.82	8.60	0.00
60	Effectiveness of "service workshops" for local community	3.39	0.81	6.41	0.00
61	Effectiveness of participation of local community in the advisory councils	3.59	0.75	10.49	0.00
62	Effectiveness of participation in the scientific councils of journals and conferences	3.48	0.70	9.20	0.00
63	Share of experiences with others	3.40	0.83	6.47	0.00
64	Level of concern about those who possesses experience and providing an adding value.	3.62	0.78	10.62	0.00
65	Fairness and objectivity of "Job Evaluation"	3.69	0.80	11.55	0.00
66	Level of concern about granting "Appreciation Certificates" for completion of assigned tasks	3.23	0.81	3.85	0.00
67	Level of concern about those who are having "Higher Scientific Degrees"	3.72	0.90	10.80	0.00
68	Level of Faculty Turnover	3.44	0.83	7.15	0.00
69	Level of average service provided to the faculty members of the University	3.66	0.87	10.24	0.00
70	Degree of job satisfaction for Faculty	3.71	0.95	9.97	0.00
	Overall Average	**3.57**	**0.82**	**9.25**	**0.00**

vii. Correlation between the Components of Intellectual Capital and Academic Performance in the Selected Academic Colleges in PSAU

Table 8 shows clearly the correlation between independent factors i.e. human capital, relational capital and structural capital and dependent factor i.e. academic performance in the selected academic colleges in PSAU. The results indicate that components of intellectual capital are positively related to academic performance. The results also indicate that human capital is more prominent and positively related to academic performance in the selected academic colleges. The second rank is the relational capital and structural capital is the third.

Table (8): Spearman's Correlations between Individual Intellectual Capital Components and Academic Performance

Variables	Human Capital	Relational Capital	Structural Capital	Academic Performance
Human Capital (HC)	1			
Relational Capital (RC)	0.283**	1		
Structural Capital (SC)	0.272**	0.075	1	
Academic Performance (AP)	0.483**	0.389**	0.154*	1

*** Correlation is significant at the 0.01 level (2-tailed).*
** Correlation is significant at the 0.05 level (2-tailed).*
Correlation without signs not statistically significant (2-tailed).

On the other hand, a correlation between the aggregate Intellectual Capital components and the Academic Performance in the selected academic colleges has been examined, therefore, table 9 shows the correlation between the independent factor (intellectual capital) and dependent factor (academic performance), which indicates that if there is any significant change in independent factor it will lead to a significant direct change in dependent factor, which is in turn supporting previous results, Therefore, the third hypothesis is confirmed.

Table (9): Spearman's Correlations between Aggregate Intellectual Capital Components and Academic Performance

	Academic Performance	Intellectual Capital Components
Academic Performance	1	
Intellectual Capital Components	0.504**	1

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

11. CONCLUDING OBSERVATIONS

From the above discussion and analysis of the data, it is found that components of the intellectual capital i.e. human capital, relational capital and structural capital were managed effectively in the selected academic colleges related to PSAU, as the means for the mentioned components of IC was above the assumed mean (3) rating [3.56,3.51,3.62] respectively. Furthermore, the overall mean was about 3.57 which tend to show highly agreeing with regard to the effectiveness of intellectual capital. On the other hand, the standard deviation for the components was relatively

low (Std=0.26) indicating that there is no dispersion in responses and respondents agree on the perceived effectiveness. One sample t-test shows that T value = 40.06 and sig = 0.000 (<) 0.05, therefore, the first hypothesis was confirmed. Hence, it is concluded that the components of Intellectual capital are well effective in the selected academic colleges in PSAU.

As regards to the second hypothesis, the overall mean for all the Academic performance indicators APIs was about 3.57 and the standard deviation for all APIs was relatively low (Std=0.82) indicating that there is no dispersion in responses and respondents agree on the perceived effectiveness. Furthermore, one sample t-test shows that T value = 9.25 and sig = 0.000 (<) 0.05, therefore, the second hypothesis was confirmed. Hence, it is concluded that the academic performance indicators are well effective in the selected academic colleges in PSAU.

As regard to the third hypothesis, it is observed that the components of intellectual capital have a positive relation on the academic performance of the selected academic colleges but still human capital is more prominent among all of them. The next is the relational capital and the third is the Structural capital. The structural capital of the selected academic colleges which is supporting human capital through the organizational structure, facilities and resources, cultural and research activities, information network, appropriate environment, rules & regulations, systems and programs have no strong influence on the academic performance as compared to human and relational capital, and that was perhaps due to that those colleges are still newly established colleges. So still it needs an enough time to get their structural capital completed. Therefore, a proper development plans, rules & regulations need to put out. The main finding of this study was consistent with the previous studies made either on the international level or the national level. These findings will be useful for universities leaders to know the weakness areas to enhance, and strongest points to utilize.

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