# The impact of intellectual capital on business performance in Kuwaiti telecommunication industry

## Abdel-Aziz Ahmad Sharabati*

Business Faculty,
Middle East University,
P.O. Box 143980, Amman, 11814, Jordan
Email: APharmaArts@Gmail.Com
*Corresponding author

## Nasser Sajid Shamari

Business Faculty,
Islamic Science University,
Amman – Jordan
Email: academic_naser@hotmail.com

## Abdul-Naser Ibrahim Nour

Business Faculty,
Zarka University,
Amman – Jordan
Email: naser1966@yahoo.com

## Abdel-Bari Ibrahim Durra and Kamel M. Moghrabi

Business Faculty,
Middle East University,
P.O. Box 143980, Amman, 11814, Jordan
Email: Durra@go.com.jo
Email: Durra@meu.edu.jo
Email: Mughrabi@meu.edu.jo

**Abstract:** The aim of the study is to investigate the influence of intellectual capital (IC) on Kuwait's telecommunication (KT) organisations' business performance (BP). Practical data were used in the empirical analysis collected from 118 managers out of 500 managers, by means of a questionnaire. Statistical techniques such as descriptive statistics, t-test, ANOVA test, correlation, multiple regressions, stepwise regression and two-stages least squares were employed. To confirm the suitability of data collection instrument, a Kolmogorov-Smirnov test, Cronbach's alpha and factor analysis were used. The results of the study indicated a positive significant relationship between IC and KT organisations' BP. The results also indicated that RC has the highest impact on KT organisations' business performance, followed by HC

and finally SC. Furthermore, empirical results indicated that there are strong inter-relationships and interactions among the three components of IC with each other.

**Biographical notes:** Abdel-Aziz Ahmad Sharabati is a Professor of Philosophy in Management and graduated from Amman Arab University, Jordan in 2008. He received his BSc in Pharmacy from Shivaji University, India in 1983 and MBA degree from Jerusalem University, Palestine in 1998. He worked for 20 years with Sandoz/Novartis Pharma Services as a Country Manager. From 2012 until now, he is working at the Middle East University, Jordan. He is currently the Head of the Management, Marketing and E-Business Department and he has supervised many Master theses and published about 40 papers in well-known management journals and conferences.

Nasser Sajid Shamari is a PhD Business Management student at World Islamic Sciences and Education University, Jordan. He has completed his Bachelor in Education from the College of Basic Education, Kuwait in 2009 with GPA 3.76, and Master of Business Administration (MBA) from the Middle East University, Jordan in 2013 with GPA 3.58. He worked in different fields with many organisations in private and public sector. He has published two papers and one paper has been accepted for publishing.

Abdul-Naser Ibrahim Nour is a Doctor of Philosophy in Accounting and graduated from Rajasthan University, India in 1996. He was the Head of the Accounting Department at Al-Isra University, Jordan for ten years, and the Dean of the Business Faculty at the Middle East University, Jordan for six years, and from 2014 till now, he is a Professor in Accounting and the Dean of the Graduate Studies at Zarqa University- Jordan. He has supervised more than 50 Master degree theses and ten PhD dissertations in different universities in Jordan and regional. He has more than 60 published articles in premier accounting and finances journals; also published nine text books in accounting.

Abdel-Bari Ibrahim Durra is a Professor in Management. He graduated from South California University. He is holding two Masters: Education and Management. He started teaching in schools then in universities. He taught in al-Yarmouk University then he became the Dean of Economic and Management Science. Later on, he was a President of al-Isra University, then the President of the Middle East University.

Kamel M. Mughrabi is a Professor of Philosophy in Business and graduated from Texas Tech University in 1970. He taught in Marquette University, Bardley University, University of Georgia, Louisiana University, Angelo State University, Texas Tech University, Jordan University, University of Nebraska, Amman National University, Mu'tah University, Arab University and Middle East University. He has published more than 50 papers in business management journals and ten textbooks in management and business.

## 1   Introduction

The Kuwaiti telecoms market is characterised by high GDP per capita (US$ 46,396 for 2008), mobile penetration of 86% for 2008 and steady fixed line penetration (18%, 2008) (Ellam, 2009). Mobile services are provided by 3 operators namely Zain, Wataniya and Viva, whilst fixed line and international gateway services are provided by the Ministry of Communications. The Kuwait telecom industry is relatively mature and advanced, with high penetration rates and per spending capita (Monteiro, 2011). By end of 2012, the Kuwaiti telecommunications (KTs) cellular sector grew by 8.54% reaching 5.21 million subscribers compared to 2011 (Palejwala, 2013). Telecom industry is knowledge intensive and constantly evolving industry. The advancement of this industry is based on people, systems, infrastructure and relationships. These are the main constituents of IC. The concept of IC has been recently developed, until now there is neither clear cut definition nor an agreement on IC constituents. Bontis (1999) stated that: "It is clear that the definition is very vague, and purposely so". Moreover, Marr and Chatzkel (2004) concluded that: "Intellectual capital as a concept is often poorly defined". Marr and Moustaghfir (2005) stated that "the concept of intellectual capital is often ill-defined" and they said that "the fuzziness of intellectual capital as a construct does not seem to decrease". Pitkanen (2006) stated there is a lack of a homogenous view on how to define, classify and evaluate intellectual capital (IC). Sharabati et al. (2010) stated: The concept of IC is not well known to most managers in Jordan and Arab countries. Moreover, Manzari et al. (2012) added that every organisation should select its appropriate IC definition and its indicators to measure it.

Finally, the aim of this research is to study the effect of IC on the KT organisations' BP. The main objective of this research is to provide sound recommendations to KT organisations, as well as to other industries and decision makers regarding the influence of IC indicators on organisations' BP. The current study might be considered as initiative that presents the effect of IC on KT organisations' BP. The content of this study may be beneficial not only to KT organisations', but also it may be important for researchers, academicians and decision makers.

## 2   Intellectual capital

### 2.1   IC definitions

Skandia (1995) defined IC as the possession of knowledge, applied experience, organisational technology, customer's relationships, and professional skills that provide Skandia organisation with a competitive edge in the market. Roos and Roos (1997) defined IC as the sum of the hidden assets of the organisation not fully captured on the balance sheet to financial position, and thus included both what is in the heads of organisational members, and what is left in the organisation when they leave. Bontis's questionnaire (1998) described IC as the difference between what an organisation's market value is and the cost of replacing its assets. Skandia (1998) described IC as the difference between the organisation's market value and its book value. Lev (2007) stated that IC is the non-physical sources of value, generated by innovation, unique organisational designs, or human resource practices. Zambon (2002) described IC as the knowledge that can be converted into profits. Stewart (2003) defines IC as: The sum of

everything everybody in the organisation knows that gives it a competitive edge; IC is intangible. Then, Bontis (2004) defined IC as the stock of knowledge assets that provides value to the organisation. It is made of human capital, structural capital, and customer capital. Garcia-Meca and Martinez (2005) IC assets can be defined as the knowledge, information, intellectual property, and experience that can be melted to create wealth While MacDougall and Hurst (2005) described IC as an intangible asset of the organisation, that helps organisations to establish and maintain their competitive advantage. Lev (2007) stated IC is the non-physical sources of value, generated by innovation, unique organisational designs, or human resource practices. Herman (2010) defined IC as the key competences of employees, comprising individual knowledge and skills. Gabriela et al. (2012) described IC as stocks and flows of knowledge available in an organisation. Finally, IC can be described as its intangible asset; knowledge that can be used to create value; it is an important for each and every organisation to be able to survive and continue its activity, and human capital is the core of IC.

From the above definitions, IC can be defined as: It is an organisational intangible asset; knowledge with potential for value or knowledge that can be used to create value; consists of three components: human, structural, and relational capital; and the human capital is the core of IC.

## 2.2 IC classification

Skandia (1995) classified IC into HC and SC. SC is divided into organisational capital and customer capital. Organisational capital in turn is divided into innovation capital and process capital. Sveiby (1997) classified IC into three parts: Internal structure, external structure and individual competence. The combination of internal structure and individual competence can collectively be called the organisation's knowledge capital, and Bontis (2001) also classified IC into three components. HC: the tacit knowledge embedded in the minds of the employees. SC: The organisational routines of the business. RC: The knowledge embedded in the relationships established with the outside environment. Moreover, Stewart (2003) divided IC into HC, SC, and customer capital. Finally, Castro and Verde (2012) stated: There are four sets of IC indicators (HC, OC, RC and technological capital). Finally, most of the scholars divided IC into three elements, but used different names for each component: Human capital (individual competences), structural (organisational or internal) capital and relational (customer or external) capital. In summary, IC can be classified into three elements: Human capital (individual competences), structural (organisational or internal) capital and relational (customer or external) capital. The current study adopts this classification.

## 2.3 IC measurements

What can be measured, can be managed, and what one intends to manage, he has to measure (Roos et al., 2001). Over the past decade, the fast growing realisation of the importance of IC (intangible assets) as a whole has led to the need to manage organisations and measure their performance in different modern ways (Pike and Roos, 2000). Malhotra (2003) concluded that: The reasons for valuation and measurement of IC and knowledge assets include understanding where value lies in the organisation and in the sectors of the national economy, and such measurement would help developing metrics for assessing success and growth of organisations and economies. Marr et al.

(2003) identified five main reasons why organisations are seeking to measure IC: to help organisations formulate their strategy, to assess strategy execution, to assist in diversification and expansion decisions, to be used as a basis for compensation, and finally, to communicate measures to external stakeholders. Hunter et al. (2005) stated that the purpose of IC measurement is to maximise organisation performance. Liu (2011) said: measuring IC can help to formulate business strategies and allocate business resources. Kasiewicz and Rogowski (2010) mentioned: There are three interrelated groups of arguments supporting the measurement of IC: The growing importance of IC as a determinant of company growth: only IC ensures lasting competitive advantage on the market: and IC is a constant and an inexhaustible source of innovations. Alizadeh (2012) pronounced: IC management helps the organisations to identify their capabilities, maintain and reconstruct them over time. Purgailis and Zaksa (2012) added: The IC identification and assessment can serve as the organisation's internal management support tool. Vashishtha et al. (2012) stated: Management of IC cannot be possible without measuring it. Finally, Manzari et al. (2012) specified: Every organisation should select its appropriate IC definition and its indicators to measure it. Finally, Tajdari and Tehrani (2012) announced: IC has become more important in today's knowledge driven economies.

## 3   Literature review

In this section the authors will briefly discuss the most recent previous literatures, and then they will take only a snapshot from each study due to limited space. The section will focus on interrelationships among IC components, and the impact of IC components on organisations' BP.

Bin Ismail (2005) dissertation concluded that there was a strong positive relationship among all the IC components (human capital, structural capital, relational capital and spiritual capital), and with the overall performance of Telekom Malaysia. Sundac and Krmpotic (2009) concluded: Only the synergy of HC, SC and RC can result in strong IC that becomes the source of the company's competitive advantage and value added. Kamukama et al. (2010) revealed: the magnitude effect of HC on performance depends on SC or RC. Sharabati et al. (2010) concluded: there are strong relationships and interactions among IC components. Ling (2011) stated: The value of IC components can mostly be actualised only in terms of their dynamic interrelationships and conjoint interaction. Ning et al. (2011) showed: There are positive relationships among IC components. Taleghani et al. (2011) showed: There are significant relationships between dimensions of the three ICs (HC, SC and RC) with productivity of Guilan Province. Khalique et al. (2011) showed: IC has positive relationship with organisational performance. Uadiale and Uwuigbe (2011) indicated: IC has a positive and significant relationship with the performance of business organisations in Nigeria. Lee et al. (2011) proved: IC has a significantly positive impact upon the performance of an organisation. Carrington and Tayles (2011) indicated: IC measurement is associated with performance. Rahim et al. (2011) indicated: IC has significant and positive relationship with firm's performance. Molodchik and Bykova (2011) showed: A company's IC influences favourably the organisational performance. Apriliani (2011) showed: There is a significant influence between the IC with financial performance. Ahmadi et al. (2011) confirmed: a positive relationship between IC and organisation's performance.

Mehdi and Reza (2012) indicated: There is a significant relationship between IC and economic growth. Jafari (2012) showed: There is a significant relationship between IC and financial performance. Hsiung and Wang (2012) said: IC components (SC, HC and RC) are not individually related to the company's value creation, and they have mutual contribution, advancement, and growth. Naveed and Malik (2012) deduced: IC has unique and competitive characteristics which considerably affect firm's performance. Zulmiati (2012) proved: Not all of IC components have significant effect on performance. Gilaninia and Matak (2012) indicated: There is relationship between the dimensions of IC (HC, RC, and SC) and enterprises' performance. Gorji et al. (2012) indicated: the IC components affect organisations' performance. Molodchik et al. (2012) found: a positive effect of IC on company performance. Djilali et al. (2012) found: The three types of IC together are associated with increase business performance of Algerian firms. Mehdivand et al. (2012) showed: HC and RC have direct and indirect effect on nano-businesses performance, while SC has only indirect effect on it, through entrepreneurial orientation. Chang and Lee (2012) indicated: a significantly interactive influence of IC upon the organisational performance of Taiwan-listed info-electronics companies. Agoston and Dima (2012) concluded: organisational IC directly and positive related to the competitiveness level and the overall performance. Rahman (2012) confirmed: greater IC efficiency leads to better financial performance. Wibowo (2012) concluded: there is a positive association between the value added of IC and financial performance in Indonesia banking companies. Ahmadi et al. (2012) showed: there is a positive relationship between IC management and financial turnover of the organisations. Besharati et al. (2012) indicated: there is a significant relationship between IC and financial performance of corporations. Zehri et al. (2012) revealed: a positive and significant association between the components of IC and economic factors and financial performance. Dadashinasab et al. (2012) proved: firms' IC had a positive impact on financial performance. Fathi et al. (2013) showed: there is significant positive relationship between IC and financial performance. Finally, Sharabati et al. (2013) results showed a positive significant effect of IC on Jordanian Telecommunication Companies' BP. The results also indicated that RC is positively and significantly affect BP, followed by HC, while SC does not significantly affect BP. The Empirical results also indicated that there are strong inter-relationships and interactions among the three components of IC.

From the literature reviews above, it can be concluded that all organisations should define, measure, evaluate, manage and develop IC to improve their performance. Therefore, the current study will explore the impact of IC on KT organisations' BP.

## 4　Problem statement

Measuring and managing IC is a worldwide problem; actually it is not limited to organisation, industry or country. Manzari et al. (2012) specified: every organisation should select its appropriate IC definition and its indicators to measure it. Vashishtha et al. (2012) said: Management of IC cannot be possible without measuring it. Therefore, the purpose of this research is to investigate the impact of IC elements on KT organisations' BP.

The study problem can be perceived by having detailed and scientific answers to the following questions:

The main question:

1    Is there a direct significant impact of IC on KT organisations' BP?

The main question can be divided into three questions according to IC elements as follows:

1.1    Is there a direct significant impact of the HC element on KT organisations' BP?

1.2    Is there a direct significant impact of the SC element on KT organisations' BP?

1.3    Is there a direct significant impact of the RC element on KT organisations' BP?

These study questions will be answered by converting them into hypothesis (as indicated in next section) then will be tested through multiple regressions analysis.

## 5    Study hypothesis and model

This study uses the most widely used classification model that is fundamentally based on both Bontis questionnaire (1998) and Sharabati et al. (2010) classification: HC, SC and RC, as shown in Figure 1.

**Figure 1**    Study basic model
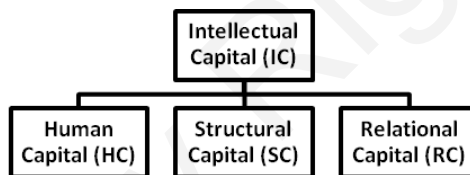


The current research studies the effect of IC variables on KT organisations' BP, as shown in the study model in Figure 2.

**Figure 2**    Study model
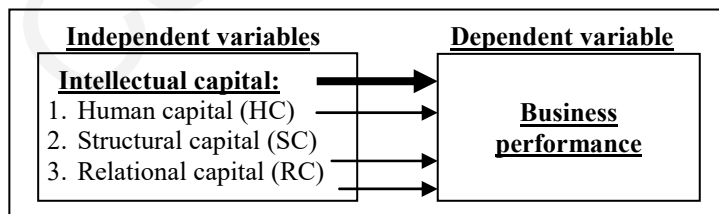


Based on the above-mentioned problem statement and its elements, and according to the study model, the following hypotheses can be developed:

H0    IC variables do not have a direct significant impact on KT organisations' BP, at $\alpha = 0.05$.

The main hypothesis can be divided into three hypotheses according to the IC elements (variables) as follows:

H0.1 HC variable does not have a direct significant impact on KT organisations' BP, at $\alpha = 0.05$.

H0.2 SC Variable does not have a direct significant impact on KT organisations' BP, at $\alpha = 0.05$.

H0.3 RC variable does not have a direct significant impact on KT organisations' BP, at $\alpha = 0.05$.

These hypotheses will be tested through multiple regressions analysis and stepwise regressions analysis to confirm the null hypothesis or to reject it, at $\alpha = 0.05$.

## 6 Study methods and procedures

The data were collected from managers working at KT organisations, by mains of questionnaire. At the time of conducting this study, there were only three telecommunication companies in Kuwait as follows: Zain, Viva and Wataniya. All the three companies were targeted to collect the data. Finally, the survey was conducted, and the collected data verified through the SPSS 20 focusing on the correlation among IC elements and their relationships with KT organisations' BP, and the results were compared with previous researches.

### 6.1 Population, sample and unit of analysis

To approach the aim of the study, practical data were used in the empirical analysis collected from 118 managers out of 500 managers working at KT organisations means of a questionnaire, during the period from January to April, 2013. The entire population was targeted to explore the topic of IC, thus negating any need for sampling. The survey unit of analysis was composed of all managers at KT organisations.

### 6.2 The questionnaire

Initial items to measure various constructs were developed depending on prior researches. With the help of experts the questionnaire was designed and developed in contrast with hypotheses and research model. Then the questionnaire was validated through expert interviews and a panel of judges.

### 6.3 Study variables

Independent variables (IC): through literature review, the researchers have identified three important independent variables of IC that contribute to KT organisations' BP: HC, SC and RC. Each was tested by 12 questions. Dependent variable of the study is related to KT organisations' BP. BP was measured through the following ten indicators (as shown in analysis). All variables were measured by five-point Likert-type scale to tap into the individual's perceptions, ranging from value 1 (strongly disagree) to value 5 (strongly agree) used throughout the questionnaire.

After collecting the data from the sample the study will use different methods to confirm suitability of collected data, then the study also will use different analysis

techniques to test the hypothesis such as descriptive analysis, relationships analysis, multiple and stepwise regressions.

## 7  Data collection and analysis

Questionnaires were delivered to 140 out of 500 managers. The researchers gathered only 122 questionnaires only 118 questionnaires were suitable for further analysis, representing 23.6% of the total unit of analysis.

### 7.1  Kolmogorov-Smirnov Z test for normal distribution

Table 1 shows that all dependent and independent variables were tested for normality, where the significant level is less than 5%.

**Table 1**     Normality test: one-sample Kolmogorov-Smirnov (Z) test

| Variables | (K-S)Z | Sig. |
|---|---|---|
| Human capital | 0.683 | 0.739 |
| Structural capital | 0.897 | 0.397 |
| Relational capital | 0.831 | 0.495 |
| Intellectual capital | 0.745 | 0.636 |
| Business performance | 0.916 | 0.371 |

### 7.2  Reliability test (Cronbach's alpha)

As shown in Table 2, the results of Cronbach's alpha were registered acceptable; however, Cronbach's alpha results were between 0.912 and 0.959.

**Table 2**     Research Cronbach's alpha

| Variables | Research |
|---|---|
| Human capital | 0.867 |
| Structural capital | 0.908 |
| Relational capital | 0.906 |
| Intellectual capital | 0.950 |
| Business performance | 0.888 |

### 7.3  Validity

Two methods were used to confirm content validity: multiple sources of data such as literatures (books, thesis, dissertations, previous researches and internet) expert interviews and panel of judges were used to develop and refine the model and measures. Then, Pearson's principal component factor analysis was carried out to confirm construct validity for all items included in the questionnaire. Table 3 shows that all variables and variable items were valid, since their factor loading values were more than 0.4.

**Table 3**    Factors loading for dependent and independent variables

| IC variables | Component 1 | Extraction |
|---|---|---|
| Human capital | 0.865 | 0.748 |
| Structural capital | 0.888 | 0.788 |
| Relational capital | 0.867 | 0.751 |
| Intellectual capital | 0.989 | 0.978 |
| Business performance | 0.775 | 0.601 |

## 7.4   Study variables analysis

Table 4 shows that the average means of the respondents' perception about the implementation of IC variables were ranging from 3.147 to 3.495, with standard deviation that ranges from (0.640 to 0.736). Such results indicate that there is an agreement on that: KT organisations have medium implementation of IC variables. The overall result indicates that there is a significant implementation of the IC variables in KT organisations, where the total average mean was 3.347 and (t = 6.182 < 1.645). The table also shows that the average means of the respondents' perception about the role of BP indicators was 3.655, with standard deviation (0.649). Such results indicate that there is an agreement on the role of BP indicators. The result indicates that there is a significant role of performance indicators, where (t = 10.972 > 1.645).

**Table 4**    Mean, standard deviation and one-sample T-test results for all variables

| Variables | Mean | Std. deviation | T value | T tabulated |
|---|---|---|---|---|
| Human capital | 3.398 | 0.640 | 6.760 | 1.645 |
| Structural capital | 3.147 | 0.736 | 2.167 | 1.645 |
| Relational capital | 3.495 | 0.693 | 7.760 | 1.645 |
| Intellectual capital | 3.347 | 0.609 | 6.182 | 1.645 |
| Business performance | 3.655 | 0.649 | 10.972 | 1.645 |

## 7.5   Relationships between the study variables

Before testing the hypotheses, Pearson correlation (r) was carried out to test the correlation among the responses of IC variables, then between them and performance indicators.

**Table 5**    Pearson's correlation (r) among independent variables, and with dependent variable

| Variable | HC | SC | RC | IC | BP |
|---|---|---|---|---|---|
| Human capital | | | | | |
| Structural capital | 0.721** | | | | |
| Relational capital | 0.616** | 0.669** | | | |
| Intellectual capital | 0.874** | 0.909** | 0.865** | | |
| Business performance | 0.567** | 0.568** | 0.646** | 0.673** | |

Note: **Correlation is significant at 0.01 levels (two-tailed)

Pearson correlation matrix Table 5 shows that the relationships among the IC variables are strong, where r ranges from 0.616 to 0.721. The matrix also showed that the relationship between IC variables and KT organisations' BP is strong, where r ranges from 0.567 to 0.646. For total IC r reaches 0.673, which indicates a very strong relationship between IC and KT organisations' BP.

### 7.6   Hypotheses testing

To test hypotheses, a multiple regression analysis was used to analyse the relationship between the IC variables and KT organisations' BP. Regression analysis is robust against non-normality, therefore, applicable in the case at hand. The coefficient of determination ($R^2$) indicates the goodness and fitness of the model.

H0   IC variables do not have a direct significant impact on KT organisations' BP, at $\alpha = 0.05$.

**Table 6**      Results of multiple regressions analysis: regressing IC variables against performance

| Variable | r | $R^2$ | F-value | Sig. |
|---|---|---|---|---|
| IC variables | 0.686 | 0.471 | 33.786 | 0.000 |

Table 6 shows that: the three variables together explained 47.1% of the variance, where ($R^2 = 0.471$, F = 33.786, sig. = 0.000), therefore, the null hypothesis is rejected and the alternative hypothesis is accepted, which indicates that the IC variables affect the KT organisations' BP, at $\alpha = 0.05$. Table 7 shows the significant effect of each variable within the IC.

**Table 7**      Un-standardised and standardised coefficients of multiple regression model for IC variables

| IC variables | Un-standardised coefficients | | Standardised coefficients | t-value | p |
|---|---|---|---|---|---|
| | B | Std. error | Beta | | |
| (Constant) | 1.168 | 0.259 | | 4.509 | 0.000 |
| Human capital | 0.211 | 0.103 | 0.208 | 2.046 | 0.043 |
| Structural capital | 0.114 | 0.095 | 0.129 | 1.198 | 0.234 |
| Relational capital | 0.404 | 0.089 | 0.431 | 4.543 | 0.000 |

Notes: *Calculate is less than 0.05

The conclusion of Table 7 shows that the RC variable has the highest effect on KT organisations' BP, where (beta = 0.431, sig. = 0.000). Thus, it indicates that the RC variable is the most significant and positively and directly regresses to the KT organisations' BP, followed by HC variable, where (beta = 0.208, sig. = 0.043), while SC variable has the lowest effect on KT organisations' BP, where (beta = 0.129, sig. = 0.234).

The relationship between the dependent and independent variables derived by this model can thus be expressed as:

$$IC = 1.168 + 0.211(HC) + 0.114(SC) + 0.431(RC).$$

H0.1 HC variable does not have a direct significant impact on KT organisations' BP, at $\alpha = 0.05$.

From Table 7, it is concluded that there is a significant effect of the HC variable on the KT organisations' BP, where (beta = 0.208, sig. = 0.0.043). Since (t = 2.046, $p > 0.05$), the null hypothesis is rejected and the alternative is accepted, which indicates that the HC variable has a significant effect on KT organisations' BP, at $\alpha = 0.05$.

H0.2 SC Variable does not have a direct significant impact on KT organisations' BP, at $\alpha = 0.05$.

From Table 7, it is concluded that there is no significant effect of the SC variable on the KT organisations' BP, where (beta = 0.129, sig. = 0.234). Since (t = 1.198, $p > 0.05$), the null hypothesis is accepted, which indicates that the SC variable does not affect the KT organisations' BP, at $\alpha = 0.05$.

H0.3 RC variable does not have a direct significant impact on KT organisations' BP, at $\alpha = 0.05$.

From Table 7, it is concluded that there is a positive direct significant effect of the RC variable on the KT organisations' BP, where (Beta = 0.431, sig. = 0.000). Since (t = 4.543, $p < 0.05$), the null hypothesis is rejected and the alternative hypothesis is accepted, which indicates that the RC variable affects the KT organisations' BP, at $\alpha = 0.05$.

### 7.6.1 Stepwise regression

To determine which variables are important in this model, the researchers used stepwise regressions model, results are as shown in Tables 8 and 9.

**Table 8** Stepwise regressions (ANOVA) for IC variables

| Model | r | $R^2$ | F | Sig. | IC variables |
|-------|-----|-----|-----|------|--------------|
| 1 | 0.646(a) | 0.418 | 83.263 | 0.000 | Relational capital |
| 2 | 0.681(b) | 0.464 | 49.775 | 0.000 | Relational capital and human capital |

Table 8 showed that the first model of stepwise regression indicated the importance of the RC variable, where ($R^2 = 0.418$, F = 83.263, sig. = 0.000). The second model of stepwise regression indicated the importance of the RC and HC, where ($R^2 = 0.464$, F = 49.775, sig. = 0.000). Therefore, it is concluded that the second model increases $R^2$ with 0.046. This means that the RC variable alone explain 41.8% of the variance, while the second model explains 46.4% of the variance. This means that HC adds 4.6% to the first model. Table 9 shows the relation between the IC variables and KT organisations' BP.

**Table 9**     Stepwise regressions model for relational capital variables

| Model | | Un-standardised coefficients | | Standardised coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. error | Beta | | |
| 1 | (Constant) | 1.541 | 0.236 | | 6.523 | 0.000 |
| | RC | 0.605 | 0.066 | 0.646 | 9.125 | 0.000 |
| 2 | (Constant) | 1.151 | 0.259 | | 4.443 | 0.000 |
| | RC | 0.448 | 0.081 | 0.478 | 5.519 | 0.000 |
| | HC | 0.276 | 0.088 | 0.273 | 3.146 | 0.002 |

Note: *Sig. <0.05

Table 9 shows that the first model of stepwise regression indicated a positive direct relation between RC variable and KT organisations' BP, where beta equals 0.646. The second model of stepwise regression showed that there was a positive direct relation between the RC variable and HC variables with KT organisations' BP, where beta equals 0.478 and 0.273, respectively. There is no third model of stepwise regression which again proves that SC does not have any significant effect on KT organisations' BP.

## 8    Data results discussions

All variables used in the current study fulfilled the criteria of normality, reliability and validity. The results indicated that there is an agreement on that: there are medium implementations of IC variables in KT organisations. It also showed that there is an agreement on the role of BP indicators. Pearson correlation matrix showed that the relationships among the IC variables are strong, and the relationships between IC variables and KT organisations' BP are also strong. These results are matching with previous studies; Bin Ismail (2005) stated that there was a strong positive relationship among all the IC components in Telekom Malaysia. Sundac and Krmpotic (2009) concluded: Only the synergy of HC, SC and RC can result in strong IC that becomes the source of the company's competitive advantage and value added. Kamukama et al. (2010) revealed: the magnitude effect of HC on performance depends on SC or RC. Sharabati et al. (2010) concluded: there are strong relationships and interactions among IC components. Ling (2011) stated: The value of IC components can mostly be actualised only in terms of their dynamic interrelationships and conjoint interaction. Ning et al. (2011) showed: There are positive relationships among IC components. Taleghani et al. (2011) showed: There are significant relationships between dimensions of the three ICs (HC, SC and RC) with productivity of Guilan Province. Finally, Sharabati et al. (2013) empirical results indicated that there are strong inter-relationships and interactions among the three components of IC.

The results also showed that: The three variables together explained 47.1% of the variance, which indicated that the IC variables affect the KT organisations' BP. However, empirical analysis revealed that the RC variable was the most significant and positively and directly regressed to the KT organisations' BP, followed by HC variable, while SC variable has the lowest effect (not significant) on KT organisations' BP. Stepwise regressions are supporting the mentioned above results. These results are going in line with previous works; Khalique et al. (2011), Uadiale and Uwuigbe (2011), Lee et al.

(2011), Carrington and Tayles (2011), Rahim et al. (2011), Molodchik and Bykova (2011), Apriliani (2011), Ahmadi et al. (2011), Mehdi and Reza (2012), Naveed and Malik (2012), Gilaninia and Matak (2012), Gorji et al. (2012), Djilali et al. (2012), Jafari (2012), and Fathi et al. (2013) showed that: There is a significant relationship between IC and business performance. Moreover, Hsiung and Wang (2012) said: IC components are related to the company's value creation and growth. Mehdivand et al. (2012) showed: HC and RC have direct and indirect effect on nano-businesses performance, while SC has only indirect effect on it. Finally, Sharabati et al. (2010) and Sharabati et al. (2013) studies results showed a positive significant effect of IC on Jordanian Pharmaceutical manufacturing industry and Jordanian Telecommunication Companies' BP. Both studies indicated that RC has the highest effect BP, followed by HC, while SC did not have significant effect on BP. The results of the current study are going in line with both Sharabati's studies which conducted in Jordan. It seems that there are similarities between Jordan and Kuwait in many issues; common language, religion and culture.

## 9 Study conclusions

The results indicated that there is an agreement on that: there are medium implementations of IC variables in KT organisations. It also showed that there is an agreement on the role of BP indicators. Pearson correlation matrix showed that the relationships among the IC variables are strong, and the relationships between IC variables and KT organisations' BP are also strong. The results also showed that: The IC variables affect the KT organisations' BP. However, empirical analysis revealed that the RC variable was the most significant and positively and directly regressed to the KT organisations' BP, followed by HC variable, while SC variable has the lowest effect (not significant) on KT organisations' BP.

## 10 Study recommendations

### 10.1 Recommendations for KT organisations

The research results may help managers establish distinctive strategic positions. Building competitive strategies for managing IC is important, therefore, telecommunication organisations should adopt an IC strategy. Furthermore, the current management system at telecommunication organisations ought to be seriously re-evaluated. They must be managed by policies, systems and programs not by individuals. Moreover, the optimal procedure for telecommunication organisations is to focus on all three components of IC in order to increase organisations' BP, since they enhance each other. The elements of IC need to be integrated with the present recruitment criteria, promotion criteria, reward and recognition criteria, performance management criteria, leadership development programs, and organisational development programs. Finally, managers at telecommunication organisations would be responsible for preparing a plan for managing IC and linking it to the organisation's strategic goals.

## 10.2    *Recommendations for academicians and future research*

This study was directed towards telecommunication industry. Further empirical work is needed to test the degree to which the findings can be generalised to other industries. This study was also conducted in Kuwait. Generalising results of Kuwaiti setting to other countries is questionable. Further empirical researches involving data collection over diverse countries are needed. Although most variables used in this research have high measurement reliability and validity, some variables may have room for further instrument refinement. More coordination and cooperation between academic institutions and organisations especially between the basic and the secondary research are recommended.

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