



## ASSOCIATION BETWEEN INTELLECTUAL CAPITAL AND COMPETITIVE ADVANTAGE: A CASE STUDY ON THE HOTEL INDUSTRY IN BALI PROVINCE, INDONESIA

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### Abstract

**Purpose:** This study aims to examine the association between intellectual capital and competitive advantage in the hotel industry in Bali Province, Indonesia. The interrelationship between components of intellectual capital –human capital, relational capital, structural capital – were tested in this study, and testing was also carried out for the association of intellectual capital – represented by structural capital – with competitive advantage.

**Methodology:** Data was collected using a self-administered questionnaire. A total of 172 questionnaires were sent to general managers of three-, four- and five-star hotels in Bali Province. A total of 109 questionnaires were returned and could be analysed (a 63% response rate). The analysis was performed using covariance-based structural equation modeling with AMOS 21.0 software.

**Main Findings:** The findings show that between the components of intellectual capital there is a positive and significant association: human capital with relational capital, human capital with structural capital and relational capital with structural capital. The findings also show that structural capital has a significant positive association with a competitive advantage.

**Implications:** Mobilising and utilising human capital as much as possible can create and enhance relational capital and structural capital. Willingness to realise, utilise, compile and develop organizational knowledge enables long-term competitive advantages to be achieved.

**Novelty:** This study examines the association of intellectual capital – facilitated by structural capital – and competitive advantage, which researchers have not done before in the hotel industry.

**Keywords:** *intellectual capital, competitive advantage, hotel industry, human capital, customer capital, structural capital.*

### INTRODUCTION

[Alserhan \(2017\)](#) argued that, in a knowledge-based economy, intellectual capital is a key element in the process of innovation, change, and creativity, thus creating a competitive advantage for organisations. He also argued that, when an organisation can properly assess intellectual capital, it is better able to achieve its objectives and make decisions related to reengineering its programs, which ultimately become more efficient, profitable and competitive, whether through quality of products or services, costs and price, or other excellence strategies. In the current economy, intellectual assets are a determinant of a company's competitive advantage ([Y. Chen, 2008](#)), establish foundations for future competitiveness([F-jardon & Martos, 2009](#)) and play an important role in sustaining competitive advantage ([Chahal & Bakshi, 2014](#)).

At present, knowledge is the main driving force behind the hotel industry ([Rudez & Mihalic, 2007](#)). [Rudez and Mihalic \(2007\)](#) argued that tangible assets, such as buildings, sports fields, and equipment, will always create value in the industry, but the larger part comes from customers who are willing to pay for intellectual capital. There are three intellectual dimensions, namely human capital, such as knowledge; relational capital, such as partnerships with stakeholders; and structural capital, such as information and communication systems ([Bontis, Keow, & Richardson, 2000](#); [Edvinsson, 2000](#); [Sullivan, 1999](#); [Stewart, 1997](#); [Roos & Roos, 1997](#); [Sveiby, 1997](#)).

As a company that operates in the service sector, employee knowledge and skills, customer relations, and processes and systems in hotel organisations will generate intellectual capital for these types of organisations ([Zeglat & Zigan, 2014](#)). These strong resources enable hotels to distinguish themselves from their competitors and to survive in a competitive environment([Tavitiyaman, Zhang, & Qu, 2012](#)). This is because intellectual capital is an organisational capability that has a positive impact on competitive advantage ([Amiri, Jandghi, Alvani, & Hosnavi, 2010](#)).

Although limited, there have been several researchers (e.g., [Engstrom, Westnes, & Westnes, 2003](#); [Jerman, Kavcic, & Kavcic, 2009](#); [Krambia-kapardis & Thomas, 2006](#)) who have explored the important role played by intellectual capital in the hotel industry. However, there is no clarity as to how the various intellectual capital elements contribute to creating competitive advantage ([Bontis & Fitz-enz, 2002](#)), and it is still difficult to find research that examines the relationship between intellectual capital and competitive advantage ([Koçoğlu, Imamoglu, & Ince, 2009](#); [Yaseen, Dajani, & Hasan, 2016](#)), not least in the context of the hotel industry.

For these reasons, we chose to test the relationship between intellectual capital and competitive advantage in the hotel industry. This research was conducted in three-, four- and five-star hotels in Bali Province, where tourism is an economic driver. In 2016, visits by foreign tourists increased by 23.14% from the previous year ([BPS-Statistics of Bali Province, 2017](#)), making competition among hotels as accommodation providers increasingly stringent. Based on data from [BPS-Statistics of Bali Province \(2017\)](#), three-, four- and five-star hotels in the province outperformed one- and two-star hotels. Over the last five years, the average room occupancy rate for three-, four- and five-star hotels was 62%. However, the average occupancy rate for one- and two-star hotels was only 58%. The average length of stay of guests in three-, four- and five-star hotels was four days, which was longer than the three-day average length of stay of guests of one- and two-star hotels. With increasing global competition in the hotel industry, achieving exceptional performance is one of the main goals of any hospitality organisation ([Zeglat & Zigan, 2014](#)), including the hotels in this study. The main driver of performance in organizations – one of which is intellectual capital – needs to be identified and managed well by managers ([Pike, Roos, & Marr, 2005](#)).

## LITERATURE REVIEW

### Intellectual Capital

There is no single definition of intellectual capital that is universally accepted. [Edvinsson and Malone \(1997\)](#) suggested that ownership of the applied experience, organisational technology, customer relationship, and professional skills are intellectual capital that provides a competitive advantage for the company. Intellectual capital is a meta-level or the holistic ability of a company to coordinate, regulate and use its knowledge resources to create value in the pursuit of a future vision ([Rastogi, 2003](#)). The capital is elusive, but, once discovered and exploited, it can give organisations a new source of resources to compete and win ([Bontis, 1996](#)). [Stewart \(1997\)](#) suggested that wealth can be created from intellectual capital which is intellectual material, such as intellectual property, knowledge, information, and experience. This is a collective power or a powerful set of knowledge.

Despite the differences between researchers regarding the components of intellectual capital, most agree that intellectual capital includes the following three dimensions:

#### 1. Human capital

Human capital is represented by intangible assets manifested by individuals ([Rudez & Mihalic, 2007](#)) – the competencies, such as skills, qualifications ([Chahal & Bakshi, 2014](#)), knowledge and experience, that employees carry when leaving a company ([Starovic & Marr, 2003](#)) and the individual knowledge of an organisation that is in its employees ([Bontis, Crossan, & Hulland, 2002](#)). Employees produce intellectual capital through competence, attitudes and intellectual intelligence ([J. Roos, Roos, Dragonetti, & Edvinsson, 1997](#)), and it is, therefore, inherent in humans and cannot be owned by an organisation ([Alserhan, 2017](#)). [Rudez and Mihalic \(2007\)](#) showed that, for hotel organisations, employee competencies, attitudes and innovation are important elements of human capital.

#### 2. Relational capital

This is the value of relationships between the organisation and its customers that emphasize customer satisfaction by paying attention to customers, listening to complaints and providing positive solutions ([Alserhan, 2017](#)). Some intellectual capital categorisations treat customer capital separately, while others regard it as part of relational capital ([Pulic, Kolakovic, & Jelcic, 2009](#)). Customer capital is part of relational capital, in which there are links with other parties, for example business associates, tourism encouragement organisations, governments, regional communities, competitors, credit providers, groups with specific behalf, the press and the society ([Rudez & Mihalic, 2007](#)). Relational capital consists of all the different business relationships that an organisation has with its stakeholders, both stated, such as partnership and allocation arrangements, and non-stated, such as connections with customers, competitors, capital provider, or material provider ([MacDougall & Hurst, 2005](#)). Therefore, relational capital is seen as knowledge embedded in all the relationships between the organisation and its stakeholders ([Yaseen et al., 2016](#)). In this study, we use the relational capital construct to examine the broader relationships that hotels have.

#### 3. Structural capital

Structural capital is owned by the company ([Stewart, 1997](#)), including the knowledge that remains within it ([Starovic & Marr, 2003](#)) when employees leave at night ([J. Roos et al., 1997](#)), and point to the infrastructure of the organisation, both physical and non-physical, including operating systems, strategic plans, processes, routines, databases, and information technology ([Walsh, Enz, & Canina, 2008](#)). Some of the structural capital is protected by law and by intellectual property rights that are legally owned by companies. In hotel organisations, structural capital is created through duties, for examples room works and food and beverage works ([Walsh et al., 2008](#)); corporate culture, business processes, and information technology are important parts of hotels' structural capital ([Rudez & Mihalic, 2007](#)).

### Competitive Advantage

Like intellectual capital, there are different definitions of competitive advantage. According to [Al-hawary and Hadad \(2016\)](#), competitive advantage is a set of characteristics that an organisation has over a certain period of time that

outperforms its competitors and opens up more opportunities. Sustainable competitive advantage can be achieved when a company develops unique core competencies ([Hoffman, Hoelscher, & Sorenson, 2006](#)). [Barney \(1991\)](#) argued that a company has a sustainable competitive advantage when it applies value-creation strategies that are not implemented by current or potential competitors and whose benefits other companies cannot replicate. [Barney \(1991\)](#) also explained that, in order to have a sustainable competitive advantage, company resources must have four features, called VRIN attributes: valuable, rare, inimitable and non-substitutable. [Collis and Montgomery \(1995\)](#) further developed the concept in terms of durability, excellence, and suitability.

Competitiveness is the capability to deliver products and services in the most effective and efficient manner, compared to competitors ([Omerzel & Gulev, 2011](#)). Competitive advantage is aimed at meeting customer needs, in order to attract customers ([Altarawneh, 2017](#)). In the knowledge economy, competitive advantage is achieved by organisations that can capture the real resources of the 21st century, in the form of knowledge, inventiveness, information, newness, and intellectual capital ([Todericiu & Stanit, 2015](#)). However, [Todericiu and Stanit \(2015\)](#) also emphasised that competitive advantage based on intangible assets is also related to the ability to combine tangible and intangible resources in different ways. Company competitive advantage can only occur through the integration of external market opportunities with the organisation's internal resources and capabilities ([Cricelli, Grimaldi, & Rogo, 2012](#)).

### Hypothesis Formulation

Development of ideas and newness can be done by organisations by creating and managing human capital, through employees who are better trained and focused, and employees who have higher morals ([Kong & Prior, 2008](#)). According to [Kong and Prior \(2008\)](#), increased human capital creates better relational capital through providing the best products and services to customers. The essence of human capital lies in the intelligence of employees; with this intelligence, human capital is not only able to establish relationships within the organisation itself but also outside the organisation. This was confirmed by [Kooistra and Zijlstra \(2001\)](#), who stated that customers are gained through good employees – those who have relevant skills, positive attitudes and motivation. [J. Chen, Zhu, and Xie \(2004\)](#) found that the high human capital in employees, become a driving force for customers and other stakeholders to establish relationships with the company so that greater profits can be obtained. The same was reported by [Bontis \(1998\)](#), [Bontis et al. \(2000\)](#), [Kim, Kim, Sa Park, Lee, and Jee \(2012\)](#) and [Zeglat and Zigan \(2014\)](#), who found that human capital has a significant positive effect on relational capital. Based on this argument, we hypothesise the following:

H1: Human capital is positively associated with relational capital.

Investments made in human capital make a person more competent and capable in developing better structural capital for an organisation ([Kong & Prior, 2008](#)). [Bontis \(1998\)](#) found a significant positive relationship between human capital and structural capital. This was confirmed by research conducted in hotel and tourism organisations by [Engstrom et al. \(2003\)](#), [Kim et al. \(2012\)](#), [Sharabati, Radi, Nour, Durra, and Moghrabi \(2013\)](#) and [Zeglat and Zigan \(2014\)](#) and indicates that, in the hotel and tourism industry, there is a link between employee behaviour and organisational structure, routine, and management ([Zeglat & Zigan, 2014](#)). The tacit knowledge available to employees is a source of innovation and renewal strategies. The creativity and intelligence of employees can change practices and allow innovative solutions to a problem, which can then improve corporate knowledge (structural capital), such as organisational routines, procedures, systems, culture, and databases. However, [Bontis et al. \(2000\)](#) found a non-significant positive relationship between human capital and structural capital; this inconsistency of findings prompted the following hypothesis:

H2: Human capital is positively associated with structural capital.

Knowledge is not only an individual creation but also the product of interactions between people and groups that ultimately results in the emergence of new organisational knowledge ([Koçoglu et al., 2009](#)). According to [Pfeffer and Salancik \(2003\)](#), a company responds to and depends on other organisational actors or companies in which resource control is critically aimed at operations, and over which the company has limited control. In order to obtain these resources, a company interacts with the other organisational entities in its environment that control these resources. We argue that, because relational capital is a flow of knowledge originating from a company's external relations, companies that invest heavily in stakeholder needs will be able to provide good services to those stakeholders. This is supported by [Bontis et al. \(2000\)](#), who found a significant positive relationship between relational capital and structural capital in both service and non-service industry sectors. Nevertheless, it is still rare for researchers to examine the relationship between relational capital and structural capital, because of which we formulate the following hypothesis:

H3: Relational capital is positively associated with structural capital.

Structural capital allows tacit knowledge to be systematic and open for use, application, and diffusion ([Kong & Prior, 2008](#)). [Kong and Prior \(2008\)](#) explained that the knowledge possessed by an organisation influences its ability to maintain a higher level of performance; in the strategic management literature, performance is an indicator of competitive advantage, and knowledge is embedded in organisations through structural capital. [Kim et al. \(2012\)](#) and [Zeglat and Zigan \(2014\)](#) found that structural capital has a significant positive effect on hotel business performance and is critical connections that make it possible to measure intellectual capital in terms of organisational analysis ([Bontis et al., 2000](#)). If

the system and procedures of a company to carry out its activities are bad, the overall intellectual capital will not reach its full potential; therefore, structural capital affects the achievement of competitive advantages (Kocoglu et al., 2009). Y. Chen (2008), Yaseen et al. (2016) and Altarawneh (2017) showed that structural capital positively influences competitive advantage, which means that corporate investment in structural capital significantly influences a company's competitive position in the market and its industrial structures. However, these findings were from information and electronics companies, telecommunications companies and pharmaceutical companies, and no research has examined the relationship between structural capital and competitive advantage in the hotel industry, because of which we hypothesise the following:

H4: Structural capital is positively associated with a competitive advantage.

## METHODOLOGY

### Research Setting and Sample

To test the hypotheses, we used a sample of three-star, four-star and five-star hotels in Bali Province, Indonesia, that were registered at BPS-Statistics of Bali Province (2017), according to whom there were 230 hotels classified as three-, four- or five-star operating in the province. With a 5% sampling error, using Slovin's formula, the sample size was calculated to be 146.

We expected a high response rate of up to 85% because the data was collected using a self-administered questionnaire, so a total of 172 questionnaires were sent in sealed envelopes. The questionnaires were accompanied by a request letter explaining the study's purpose, asking that general managers fill out the questionnaire and assuring the participants of confidentiality. We sent the questionnaires directly to each member of the research sample. Within two months of the requests being sent, we began to receive the completed questionnaires.

### Instruments

Intellectual capital consists of human capital, relational capital and structural capital variables, which were measured in our study using a five-point Likert scale, ranging from 'strongly disagree' to 'strongly agree'. The questionnaire contained 13 statements to which respondents indicated the extent of their agreement on that scale. Instruments for measuring intellectual capital were adopted from Wang, Wang, and Liang (2014). Human capital was measured using five items: (1) employees have suitable work experience to complete work; (2) employees have professional skills according to their work and functions; (3) the training program provided by the company is well-designed; (4) new ideas and knowledge are often developed by employees; and (5) employees have high creativity. Four items were used to measure relational capital: the company (1) establish intense communication and effective collaboration to find and solve problems; (2) maintains the best interactions with stakeholders; (3) maintaining long-term relations with its customers; and (4) has many of the best suppliers. Structural capital was measured using five items: (1) the company's operating procedures are most efficient; (2) the company responds very quickly to changes; (3) the company's information systems easily accessible; and (4) the company's culture and atmosphere are flexible and comfortable.

Our research also adopted five items from Y. Chen (2008) to measure competitive advantage, using the same five-point Likert scale as above. The questionnaire contained five statements to which respondents indicated the extent of their agreement on that scale. The measurement of competitive advantage comprised the following five items: (1) when compared to its major competitors', the quality of the products or services offered by the company is better; (2) managerial ability possessed by the company is better than its major competitors; (3) the profitability obtained by the company is better than its major competitors; (4) the company has a better image than its major competitors; and (5) a company's product or service cannot be easily imitated by a major competitor. Covariance-based structural equation modeling (CB-SEM) was applied to test the study's hypotheses, using AMOS 21.0 software.

## DISCUSSION / ANALYSIS

Of the 172 questionnaires sent, 109 were returned (a 63% response rate). A non-response bias test of the respondents who returned the questionnaires on time and late showed that there were no issues of non-response bias<sup>1</sup>. The demographic analysis showed that most of the respondents who participated in the study were male (65%), had a working life of more than five years (94%) and had an undergraduate educational background (78%); a plurality worked at five-star hotels (40%).

Composite reliability (CR) and average variance results are summarised in Table 1. To be considered adequate, the loadings should be at least 0.60, and ideally 0.70 or higher (Chin, 1998). Referring to Table 1, all indicators have a loading value above 0.70, indicating adequate loadings. The CR values in Table 1 are between 0.838 and 0.896, showing that the CR coefficients for the constructs are all above the accepted level of 0.70 (Nunnally, 1978). The average variance extracted (AVE) is used to assess convergent validity. A construct with an AVE value of 0.50 or higher is considered to have

<sup>1</sup>We divided the responses into two groups based on the time of arrival. We then conducted a *t*-test on the differences between the answers for each research variable. We found no significant differences between the two groups.

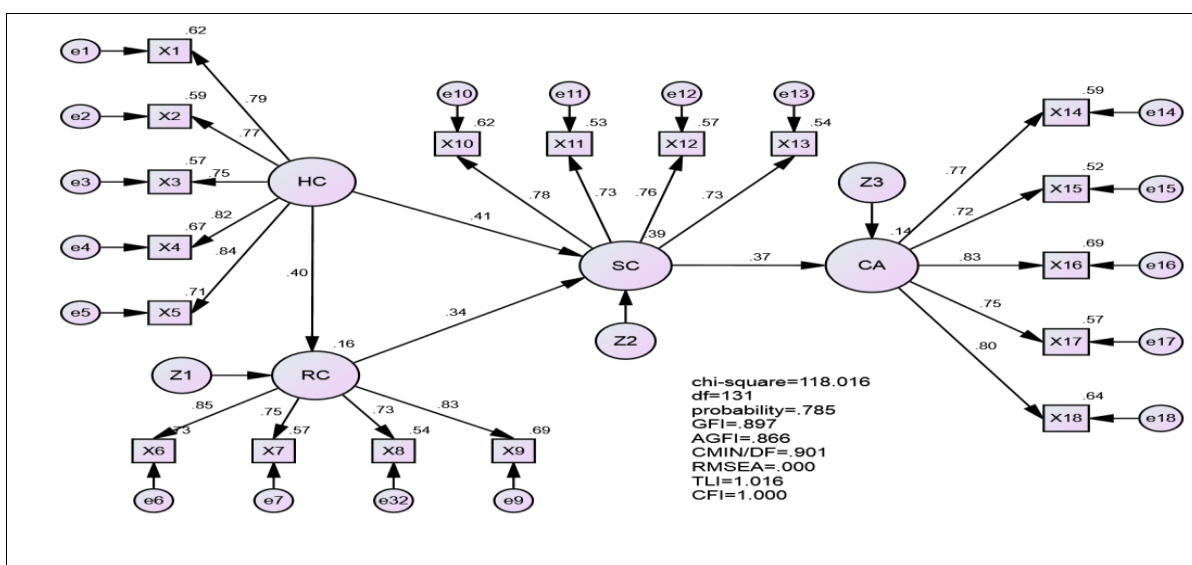


adequate convergent validity (Fornell & Larcker, 1981; Hulland, 1999). All constructs in this study have values above 0.50 which indicate the fulfilment of convergent validity (see Table 1).

**Table 1: Composite Reliability and Average Variance Extracted Results**

			Std Loading	Std Loading <sup>2</sup>	Measurement Error	Composite Reliability	Average Variance Extracted
X1	<---	HC	0.787	0.619	0.381		
X2	<---	HC	0.768	0.590	0.410		
X3	<---	HC	0.754	0.569	0.431	0.896	0.633
X4	<---	HC	0.820	0.672	0.328		
X5	<---	HC	0.845	0.714	0.286		
X6	<---	RC	0.852	0.726	0.274		
X7	<---	RC	0.752	0.566	0.434		
X8	<---	RC	0.733	0.537	0.463	0.872	0.631
X9	<---	RC	0.833	0.694	0.306		
X10	<---	SC	0.784	0.615	0.385		
X11	<---	SC	0.729	0.531	0.469		
X12	<---	SC	0.756	0.572	0.428	0.838	0.563
X13	<---	SC	0.732	0.536	0.464		
X14	<---	CA	0.771	0.594	0.406		
X15	<---	CA	0.722	0.521	0.479		
X16	<---	CA	0.830	0.689	0.311	0.883	0.603
X17	<---	CA	0.754	0.569	0.431		
X18	<---	CA	0.801	0.642	0.358		

In SEM, an overall model fit criterion needs to be evaluated that shows the extent to which the developed model is consistent with the data. When the model-implied covariance matrix is equivalent to the empirical covariance matrix, then a model is said to fit the observed data (Schermelleh-engel, Moosbrugger, & Müller, 2003). The results of the full latent variable model estimation are shown in Figure 1.



**Figure 1: Structural Equation Modelling Results**

The evaluation of the criteria for goodness-of-fit models is shown in Table 2. In AMOS, the chi-square value is known as CMIN. The chi-square value is also known as the likelihood ratio chi-square, discrepancy function, and chi-square goodness of fit. The model is accepted as "fit" if between the model implied covariances and the observed sample

covariances have differences – indicated by the chi-square variate– with a value smaller than the expected distribution value, at a probability threshold of 0.05 (Barrett, 2007). With a probability value of 0.785 (> 0.05), the model in this study was accepted as "fitting" because it has a fit statistic value of 118,016 that is less than the expected value of 158,712. There is no agreement on the minimum ratio for acceptable CMINDF, but Wheaton, Muthén, Alwin, and Summers (1977) recommends ranging from as high as 5.0 to as low as 2.0 (Tabachnick & Fidell, 2014). The CMINDF value of 0.901 shows an acceptable fit.

**Table 2 Overall Models Fit Evaluation**

Fit Measure	Default Model	Saturated	Independence	Cut off	Macro	Explanation
Discrepancy	118.016	0.000	1124.971	Low chi-square with a certain degree of freedom, and a p-value of more than 0.05	CMIN	(131;0.05)=158.712*
Degrees of freedom	131	0	153		DF	Good
P	0.785		0.000		P	Good
Discrepancy/df	0.901		7.353	≤ 2.00	CMINDF	Good
GFI	0.897	1.000	0.315	≥ 0.90	GFI	Good
Adjusted GFI	0.866		0.235	≥ 0.90	AGFI	Good
RMSEA	0.000		0.243	≤ 0.08	RMSEA	Good
Tucker-Lewis index	1.016		0.000	≥ 0.95	TLI	Good
Comparative fit index	1.000	1.000	0.000	≥ 0.95	CFI	Good

\*Chi-Square table at  $\alpha = 0.05$  with  $df = 131$

The GFI (0.897) and AGFI (0.866) values of this sample are below 0.90, but the GFI and AGFI are known to depend on the sample size (Mulaik et al., 1989). The GFI and AGFI values are close to 0.90, which shows a relatively good fit. It has been suggested that RMSEA values less than 0.05 are good (see Fabrigar, Wegener, MacCallum, & Strahan, 1999; Browne & Cudeck, 1992). Therefore, the RMSEA value of 0.000 in this sample indicates an acceptable fit.

The other fit indices (i.e., TLI) should be over 0.95 for a good fit (Hu & Bentler, 1999), and, in this sample, the TLI indices are above that criterion. The CFI has values in the range of 0.0 to 1.0, but if the CFI value obtained is higher than 0.95 then it shows a good fit (Hu & Bentler, 1999); the CFI value of 1.000 in this sample, therefore, indicates an acceptable fit.

The results of the hypothesis testing are presented in Table 3 and show that human capital has a positive association with rational capital with a coefficient of 0.404 and  $p < 0.01$ . These results support the H1 hypothesis – human capital is positively associated with relational capital. These findings indicate that three-, four- and five-star hotels in Bali Province have transformed tacit knowledge that is personal, is difficult to formulate and is communicated and shared with others into the knowledge inherent in the company's external relations. The hotels have suitable work experience, have professional skills, are creative and develop new ideas and knowledge, all of which enable them to discover and solve problems through intimate communication and effective collaboration, maintaining interaction with stakeholders and sustaining long-term relationships with their customers. The efforts of the hotels to increase their human capital by providing well-designed training programs can also not be ignored. These findings support the research of Bontis (1998), Bontis et al. (2000), Kim et al. (2012) and Zeglat and Zigan (2014).

**Table 3: Hypothesis Testing Results**

		Estimate	S.E.	C.R.	P	Explanation	Conclusion
RC	<--- HC	0.404	0.116	3.754	***	Significant at $p < 0.01$	H1 is supported
SC	<--- HC	0.405	0.108	3.700	***	Significant at $p < 0.01$	H2 is supported
SC	<--- RC	0.338	0.101	3.059	0.002	Significant at $p < 0.01$	H3 is supported
CA	<--- SC	0.374	0.111	3.276	0.001	Significant at $p < 0.01$	H4 is supported

Referring to Table 3, human capital was also found to have a significant positive effect on structural capital (coefficient = 0.405;  $p < 0.01$ ). Hence, hypothesis H2, which states that human capital is positively associated with structural capital, is

supported. These findings indicate that three-star, four-star and five-star hotels in Bali Province can transform employee knowledge into non-human knowledge and individual unarticulated knowledge into something more concrete, such as written or electronic documents. The work experience and professional skills possessed by employees, as well as their ability to develop new ideas and knowledge, result in the hotels developing highly efficient operating procedures. In addition, hotels can quickly respond to change and develop information systems that can be easily accessed. All of this makes the culture and atmosphere of the hotels flexible and comfortable for all stakeholders. The findings support the opinions of [Yeung and Leung \(2007\)](#), who suggested that in order for operations and the quality of hotel services to improve, the knowledge and skills possessed by employees must be used effectively. The findings also support previous research by [Bontis \(1998\)](#), [Engstrom et al. \(2003\)](#), [Kim et al. \(2012\)](#) and [Zeglat and Zigan \(2014\)](#).

The relationship between relational capital and structural capital is significant with coefficients 0.338 and  $p < 0.01$ . This supports the statement in hypothesis H3 – relational capital is positively associated with structural capital. These findings indicate that, although relational capital is the most difficult intellectual capital to codify ([Bontis, 1998](#)), three-, four- and five-star hotels in Bali Province have been able to explore relational capital for the creation of corporate value. These hotels can transform external knowledge into corporate knowledge well, and, through intimate communication and collaboration that is effective in finding and solving problems, they can develop operating procedures that are efficient and respond to change quickly. This is also due to the hotels having good suppliers that support the services provided. The culture and atmosphere of the hotels are felt by stakeholders to be flexible and comfortable, as a result of which the hotels can maintain their interactions with stakeholders and their long-term relationships with customers. These results support the findings of [Bontis et al. \(2000\)](#), who found that the relationship between relational capital and structural capital was positive and significant in the service industry.

The results of the H4 hypothesis testing indicate that there is a significant positive effect (coefficient = 0.374;  $p < 0.01$ ). Thus, hypothesis H4, which states that structural capital is positively associated with a competitive advantage, is supported. This finding is similar to those of [Y. Chen \(2008\)](#), [Yaseen et al. \(2016\)](#) and [Altarawneh \(2017\)](#). The development of an information system that makes it easier for its users results in three-, four- and five-star hotels in Bali Province having better images than their competitors. [Freeman \(2001\)](#) argued that over time competitive advantage is developed slowly using a variety of factors, some of which are most important are organisational integrity and image. Because the hotels can develop highly efficient operating procedures, their profitability and managerial capabilities are better than their competitors. The hotels' ability to respond to changes quickly results in their main competitors being unable to imitate products or services easily and makes the quality of the products or services offered better than that of their competitors. These findings support [Jaradat, Samraie and Jadallah \(2012\)](#), who argued that effective control of intellectual capital, which cannot be imitated, is better for obtaining a sustainable competitive advantage than investment and physical resources. These findings also support the conceptualization of [Nahapiet and Ghoshal \(1998\)](#), who claimed that structural capital facilitates new intellectual capital, which helps in developing competitive advantage.

## CONCLUSION

This study found significant, positive relationships between the elements of intellectual capital: human capital, relational capital and structural capital. The study also found that structural capital has a significant positive relationship with a competitive advantage, which indicates that the relationship between the three intellectual capital elements can maximize the potential of an organisation to create value. The ability of the hotels to manage the three intellectual capital elements supports the achievement of competitive advantage. This research contributes to understanding in the field of intellectual capital and underlines that, when we discuss intellectual capital, we cannot ignore the interrelationships of the three intellectual capital elements. This research also contributes to the current conceptualization of intellectual capital by proposing it as a variable that can support the achievement of organisational competitive advantage.

The findings of this study have implications for managers of three-, four- and five-star hotels in Bali Province, who should continue to mobilize and utilise human capital as well as possible to create and improve relational capital and structural capital. Managers in these hotels must also be aware of, utilise, codify and develop organisational knowledge so that long-standing competitive advantages can be achieved. This study provides evidence that intellectual capital, as an intangible owned by a company, can create value through competitive advantage. This has implications for academics and researchers, who should conduct more in-depth exploration of intellectual capital so that the theory of intellectual capital can be expanded.

## LIMITATION AND STUDY FORWARD

This study has several limitations. Generalisability is limited because we only examined one service sector – the hotel industry – and focused on only upper-class hotels. Further research could be conducted in the broader service sector or with other classes of hotels.

This study did not examine the direct relationships between competitive advantage and either human or relational capital. Further academic research is needed to examine these direct relationships to determine whether intellectual capital can also directly contribute to achieving competitive advantage. The instruments used to measure intellectual capital may be

another limitation because they were not specifically designed for the hotel industry; further research is therefore needed on those instruments, to ensure they are relevant to the hotel industry.

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