



# The Influence of Technology and Innovation Strategy on Financial Performance Through the Mediation of Intellectual Capital in Private Hospitals

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**Abstract.** Hospitals as providers of health services to the community are required to always be improving performance through raising the quality of the services and resources they have which are part of the technology and innovation strategy carried out by hospitals. This study aims to examine and analyse the effect of technology and innovation strategy on financial performance mediated by intellectual capital at private hospitals in East Java Province. This research employs a quantitative approach and uses primary data. The population of this study comprises staff from the upper management level who can represent policy formation at private hospitals in East Java Province. The total sample of this study comprised 71 hospitals obtained using the Slovin formula. The data in this research were analysed using partial peast square. The results obtained indicate that technology and innovation strategy has no significant influence on financial performance, and intellectual capital—as an intervening variable—is proven to be able to mediate an indirect relationship. Therefore, it can be said that perfect or complete or full mediation occurs, meaning that the independent variable is not able to significantly influence the dependent variable without going through the mediator variable.

**Keywords:** technology and innovation strategy · financial performance · intellectual capital · private hospital

## 1 Introduction

Globalization has been causing the world of business to experience rapid changes and a need for sustainable growth. This has resulted in increasingly keen levels of competition. Therefore, companies are required to achieve good performance that is above the industry average (Above Average Returns or AAR). In order to achieve the desired AAR, a competitive advantage is needed so that competitors can be outperformed in a changing,

competitive market. Efforts need to be made along with innovation strategies to achieve a sustainable competitive advantage (Porter, 1996). According to Hambrick (1981) a company's innovation strategy is a pattern of decisions that have a relationship with the achievement of financial performance. In creating a product or service that can meet consumer satisfaction and ongoing trends, the company must have an efficient business strategy. One element of this is through its innovation strategy which is an important factor that can determine the success of a company (Frambach and Schillewaert, 2002). Innovation strategy has an impact on company performance where innovation is an important factor for companies to be able to compete in a sustainable way, and it is an important component of a company's business strategy (Hitt et al., 2001).

The strong competition between businesses, which is in line with the increasing needs and knowledge of consumers nowadays, demands efficiency and effectiveness in increasing product competitiveness, namely through the innovation strategy. A company's performance in terms of cost efficiency is very important if it is to prevail in the face of competition in this era of the global economy. Many things, from both internal and external parties, can affect the cost efficiency performance of companies and this also applies to the hospitals in this study. The theory called the resource-based view (RBV) states that a company's competitiveness is determined by internal resources that are scarce and valuable, and that also cannot be imitated or replaced. Innovation, as a driver of company performance in a dynamic business environment, has attracted the attention of researchers. Innovation is seen as very relevant in terms of increasing market demand, and it serves as an engine of economic growth in this era of global economy. The economist Schumpeter (1934) has stated that the stimulus for economic development is innovation. Companies that are less innovative face a bleak future. Various innovations, especially related to processes and products, have been studied in order to demonstrate their effect on financial performance.

The success of a hospital depends on the perceptions of its patients or their assessment of the quality of services provided by the hospital's personnel. The purpose of innovation is not only to reduce costs, but also to improve product and service quality, design better products, extend product life cycles, and respond to customer needs and demands. In addition, in Indonesia, innovation is carried out in accordance with the mandate of Law No. 44 of 2009 concerning hospitals, article 33 paragraph 1, which stipulates that every hospital must be run by an effective, efficient, and accountable organisation. A gap that is arising nowadays is due to a declining trend in hospital efficiency; only about 33% of hospitals are deemed efficient while the rest are not efficient (Fitriana et al., 2019 in Lusitawati et al., 2020). If the efficiency of a hospital decreases, it will have an impact on its service and independence. The improvement of hospital efficiency can be carried out through a number of innovations. The current problem is that there are still many hospitals in Indonesia that continue to be inefficient. The fundamental things needed to increase efficiency are the development and implementation of innovative technology so that the resulting total financial income can be increased which is expected to promote the independence of these hospitals.

The main challenge in Indonesia is that health needs are increasing, both in terms of quantity and quality (Ministry of Health of the Republic of Indonesia, 2020). Therefore, more health resources are required to meet the increasing health needs. Meanwhile,

resources (human resources, funding, facilities, scientific and technological capacity, management, medical materials, medicines, etc.) are limited, so the gap between needs and resources has been growing bigger. This is the problem and the challenge for hospitals in the era of globalization. Hospital managers must know what things—related to health services—are needed by patients, and hospital leaders must be able to innovate service products to improve corporate performance and overcome competition in order to create competitive advantage (Assauri, 2013).

Based on the above description of this phenomenon, the authors are interested in conducting research that analyses the influence of technology and innovation strategy on financial performance mediated by intellectual capital at private hospitals in East Java Province as indicated by the title of this paper.

## **2 Literature Review**

### **2.1 Industrial-Organisation Theory (I/O)**

Industrial-Organisation (I/O) theory posits that external factors are more vital to a company than internal factors in terms of efforts to achieve a competitive advantage. It is necessary to analyse the structural strength when engaging with the competition, and this is known as the Five Forces Model (Porter, 1985). The elements of the Five Forces Model are competition between similar companies, the probability of new competitors, the potential for developing substitute products, the bargaining power of sellers/suppliers, and the same for buyers/consumers (Mardiana and Hariayti, 2014).

### **2.2 Resource Based Theory**

Resource Based Theory (RBT) posits that internal factors are more vital than external factors in terms of the achievement of competitive advantage. RBT is a perspective which has resources and capabilities as the main focus which is a fundamental principle as a determinant of community welfare. Barney (1986) asserts that, in RBT, resources are generally defined as including assets, organisational processes, controlled knowledge, company attributes, and information that can be used to implement strategies. RBT is categorized into three types of resources, namely physical capital, intellectual capital, and organisational capital.

### **2.3 Contingency Theory**

The contingency approach is a response to the universalistic approach which posits that the relationship between organisational design and outcome variables is consistent for each condition. According to Otley (1980), the basic thesis of the contingency approach is that there is no concept or organisational design that can be applied universally and efficiently under any conditions or in any location. Therefore, it can be concluded that organisational design is only suitable for a particular context or condition. The contingency theory approach identifies optimal forms of organisational control in various operating conditions and seeks to describe what the operating procedures of organisational control look like (Mardiana and Hariayti, 2014).

## 2.4 Innovation Strategy

According to Hambrick (1981), a company's innovation strategy is a pattern of decisions that have a relationship with the achievement of financial performance. In creating a product or service that can provide consumer satisfaction and align itself with ongoing trends, a company must have an efficient business strategy, one element of which is its innovation strategy which is an important factor that determines the success of that company (Frambach and Schillewaert, 2002). To determine the level of operational performance of the company, the researchers opt to refer to the opinion of Schroeder (1994) which states that the right performance measurement should be obtained from the results of the implementation of operations and business, which is indicated by quality, cost, delivery, flexibility and innovation. According to Read (2000), the implementation of innovation is part of a company's strategic dimension. The failure of the organisation to achieve excellence in terms of the adopted innovation reflects a failure of implementation or the failure of the innovation itself. Innovation implementation is a decision made by senior managers in organisations who use innovation in their work (Klein and Sorra, 1996).

## 2.5 Financial Performance

Performance is the ability to work which is depicted by the results of that work. The company's performance can be described as the results it achieves in a certain period which refers to a specified standard. Performance is a measurable result and it a description of the empirical condition of a company in terms of various agreed measures. According to Kaplan and Norton (1996), company performance appraisal means an assessment process or system related to the implementation of a company's performance capabilities based on established standards. The purpose of performance appraisal is to motivate personnel to achieve organisational goals and comply with established standards of behaviour in order to obtain the actions and results desired by the organisation. According to a study by Tjiptono (2005) on company performance appraisal, the so-called Total Quality Service approach is a commitment to realizing a customer-oriented concept, setting a service performance standard to measure company performance by benchmarking, recognizing and modelling exemplary behaviour, and maintaining attractiveness for consumers at all times. This is done in an effort to increase sales and market share which can have an impact on improving the company's financial performance.

## 2.6 Intellectual Capital

Intellectual capital is a company's investment in the form of employee training, research and development, customer relations, administrative and computer systems. The better the intellectual capital performance of a company, the higher the level of disclosure of financial statements which can lead to increased stakeholder confidence in the company. According to Bontis (2001), intellectual capital consists of three main elements, namely human capital, structural capital, and relational capital. Human capital is the lifeblood of intellectual capital. It is the source of innovation and improvement, but it is a component that is difficult to measure. Human capital is also the source of very useful knowledge,

skills, and competencies in an organisation or company. Structural capital is the ability of an organisation or company to carry out that entity's routine processes and manage structures that support employees' efforts to produce optimal intellectual performance and overall business performance. For example, the company's operational system, manufacturing processes, organisational culture, management philosophy, and all forms of intellectual property that are owned by the company. This element is a component of intellectual capital that provides real value. Relational capital is a harmonious network of relationships and associations that a company has with its partners, whether they are reliable and quality suppliers, or loyal customers who are satisfied with its services, which stem from the company's relationship with the government and the local community.

## 2.7 Hypothesis Development

### **The Influence of technology and Innovation Strategy on Financial Performance**

Innovation is the main function in the process of improving the business performance of a company. Through innovation, companies can create both new production resources and new management of existing resources. Product innovation is needed to survive in the business world, so that there is no product saturation among consumers (Sari, 2016). Innovation is a form of organisational change. It encompasses creativity in creating new products, services, ideas or new processes. Innovation can be defined as a process of adapting products, services, ideas, or processes that already exist within the organisation or are developed from outside the organisation (Jannah and Muid, 2014). The results of research by Mustikowati dan Tysari (2014) show that innovation has a direct and positive effect on company performance. Based on this description, the following hypothesis can be proposed:

**H1: Technology and Innovation Strategy influences Financial Performance.**

### **The Influence of Technology and Innovation Strategy on Financial Performance Mediated by Intellectual Capital**

Hariyati and Tjahjadi (2015) revealed that innovation strategy has an influence on financial performance mediated by intellectual capital. This supports the RBT theory which states that intellectual capital is important for the relationship between innovation strategy and financial performance. To achieve good performance, business entities must have a competitive advantage, so that they can compete in the global market. Competitive advantage can be achieved by having the right competitive strategy. Non-financial performance and financial performance can be achieved if there is a qualified intellectual capital. Intellectual capital to the criteria for a unique resource capable of creating competitive advantage in formulating strategies so as to create value for the entity. This is because achieving this requires reliable knowledge and information. Harrison and Sullivan (2000) suggest that the success of an entity is strongly influenced by its routine efforts to maximize the value of its intellectual capital. Based on this description, the following hypothesis can be proposed:

**H2: Intellectual Capital mediates the influence of Technology and Innovation Strategy on Financial Performance.**

### 3 Research Methodology

This study uses a quantitative methodology. The population in this study comprises 244 private hospital in East Java and from each hospital one sample was taken which could represent the formation of policies at that hospital. The total sample used was 71 samples obtained using the Slovin formula with a standard error of 10% which is still suitable for use for social research (Ghozali, 2019). Data collection was done using a questionnaire consisting of questions developed from the indicators that had been researched, namely technology and innovation strategy, intellectual capital and financial performance.

#### 3.1 Data Analysis Technique

This study used statistical analysis in the form of validity and reliability tests as well as testing the study's hypotheses. The data processing conducted in order to analyse the relationship between the research variables used Partial Least Square (PLS) analysis and Smart PLS 3.0 software. PLS is useful for predicting the effect of, and explaining, the relationship between variables. PLS is a powerful analytical method that is not based on many assumptions (Ghozali, 2019: 17). The PLS approach is distribution free (meaning that it does not assume certain data, can be nominal, category, ordinal, interval and ratio). PLS uses the bootstrapping method or random multiplication where the assumption of normality will not cause a problem for PLS. It also uses two analytical models, namely the inner model and the outer model. The inner model is the relationship between the dependent variable and the independent variable, while the outer model is the relationship between the variables and their measurement indicators.

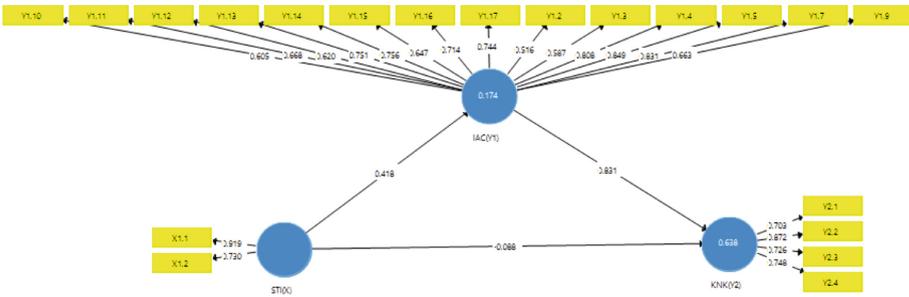
In this study, the validity test was carried out by looking at the values of convergent validity and discriminant validity. Convergent validity is declared valid if the outer loading value has a value of 0.50. As for discriminant validity, using the AVE measurement, the value for each variable must be greater than 0.50. After the validity test, the reliability test was conducted. Measuring the reliability of a construct with reflexive indicators using PLS can be done with composite reliability. A construct or variable is said to be reliable if composite reliability  $>0.6$ .

The inner model can be evaluated with the coefficient of determination (R-Square or  $R^2$ ). There are three classifications of criteria for limiting the value of  $R^2$ , namely the R-squares with values of 0.75, 0.50 and 0.25 which indicate a strong, moderate, and weak model (Ghozali and Latan, 2015: 81). The final stage is related to hypothesis testing using bootstrapping or jackknifing procedures. The resulting value is a t-count value which is then compared with a t-table. If the t-count  $>$  t-table (1.96) at the significance level (5%), then the estimated path coefficient value is significant (Ghozali, 2019).

### 4 Results and Discussion

#### 4.1 Model Test Results (Outer Model)

Convergent validity can be examined by looking at the value of outer loadings. The loading factor limit is 0.5. If the loading factor value is  $>0.5$ , then the criterion for convergent validity is met, whereas if the loading factor value is  $<0.5$ , then the construct



Source: Data processed using PLS 3.0, 2022

Fig. 1. Outer Loading Model Value Calculation Results. Source: Data processed using PLS 3.0, 2022

must be excluded from the analysis (Ghozali, 2019). The following is the concept of the research model used in the SmartPLS 3.0 software:

By looking at the graphic representing the model above, it can be seen that the proxies that have an outer loading factor value greater than 0.5 are assumed to be eligible for use as indicators that can reflect each corresponding variable. Based on Fig. 1, the indicators Y 1.1, Y 1.6, and Y 1.8 were dropped because they had an outer loading factor value that was below 0.5, so it was assumed that its was not feasible to use them as indicators that could reflect each corresponding variable.

### 4.2 Cross Loading Test Results

A test of discriminant validity is carried out to ensure that the concept of each latent variable is different from other variables (Ghozali, 2019).

Table 1 shows that the cross loading value for each indicator of each latent variable is greater than the cross loading value if it is associated with other latent variables. This means that each latent variable already has good discriminant validity where some latent variables have a measure that is highly correlated with other constructs.

Discriminant validity can also be measured by comparing the value of the square root Average Variance Extracted (AVE) of each construct with the correlations between other constructs in the model. The AVE value must be greater than 0.50 or have a p-value smaller than the 5% significance level (Ghozali, 2019) (Table 2).

According to the results presented in the AVE table, all variables have discriminant validity values above 0.50. It can therefore be concluded that all variables are valid and can used with confidence.

### 4.3 Composite Reliability Test Results

The reliability test is needed to measure the stability and consistency of an instrument in measuring a concept or variable. The construct is declared reliable if the composite reliability value is >0.70 (Ghozali, 2019).

**Table 1.** Cross Loading Calculation Results

INDICATOR	STI	IAC	KNK
X1.1	0.918919	0.417553	0.264627
X1.2	0.7295	0.246066	0.144143
Y1.10	0.123789	0.604727	0.499867
Y1.11	0.227045	0.668086	0.558739
Y1.12	0.153438	0.619949	0.528123
Y1.13	0.228499	0.751401	0.545265
Y1.14	0.444765	0.756052	0.554852
Y1.15	0.165219	0.647085	0.590125
Y1.16	0.322689	0.713564	0.561645
Y1.17	0.261358	0.743608	0.710724
Y1.2	0.173887	0.516473	0.441378
Y1.3	0.479708	0.587212	0.322143
Y1.4	0.27524	0.808143	0.651275
Y1.5	0.477731	0.848804	0.625358
Y1.7	0.364477	0.830928	0.653032
Y1.9	0.331288	0.663174	0.495442
Y2.1	0.115593	0.594743	0.703369
Y2.2	0.23499	0.685186	0.871605
Y2.3	0.089189	0.53599	0.726417
Y2.4	0.344803	0.604779	0.748185

Source: Data processed using PLS 3.0, 2022

**Table 2.** Average Variance Extracted (AVE) Calculation Results

VARIABLE	AVE
STI	0.68881
IAC	0.514615
KNK	0.585496

Source: Data processed using PLS 3.0, 2022

According to Table 3, all variables have a composite reliability value greater than 0.70. It can therefore be concluded that all variables in the study are reliable and can be relied upon when they are used in further analytical tests.

**Table 3.** Composite Reliability Measurement Results

VARIABLE	Composite Reliability
STI	0.813842
IAC	0.931434
KNK	0.848678

Source: Data processed using PLS 3.0, 2022

**Table 4.** R Square (R<sup>2</sup>) Measurement Results

VARIABLE	R Square
STI	-
IAC	0.17621
KNK	0.631032

Source: Data processed using PLS 3.0, 2022

**4.4 Goodness of Fit Model (R-Square) Test Results**

The structural model or inner model testing was conducted in order to measure the overall relationships between the variables in this study. The measurement of the inner model is carried out to determine the level of influence of these relationships, as well as the level of influence of the overall relationship between variables in the system being built. The measurement of the inner model to test the influence between variables in the study used the R2 value. The value of R2 lies between 0–1, and the fit of the model is said to be better as R2 gets closer to 1 (Ghozali, 2019). Based on the R2 value, a model can be classified as strong ( $\leq 0.70$ ), medium ( $\leq 0.45$ ) and weak ( $\leq 0.25$ ).

Table 4 shows that the R2 value of intellectual capital is 0.171621 and the value of financial performance is 0.631032; this means that the technology and innovation strategy variable can be explained by the intellectual capital variable with a value of 17.62% and financial performance with a value of 63.1%. Therefore, the remainder for the intellectual capital variable is 82.38% and financial performance of 36.9% is explained by other variables that are not used in this study.

**4.5 Hypotheses Testing Results**

The estimated value of the path coefficient between the constructs must have a significant value. The significance of the relationship can be obtained by using a bootstrapping or jackknifing technique. The resulting value is a t-count value which is then compared with a t-table. If the t-count > t-table (1.96) at the necessary significance level (=5%) then the estimated path coefficient value is significant (Ghozali, 2019).

**Table 5.** Bootstrapping Measurement Results

Variable Relationship	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (IO/STERRI)	P Values	Note
STI => KNK	-0.087	-0.069	0.131	0.664	<b>0.507</b>	Not Significant
STI => IAC	0.420	0.450	0.093	4.528	<b>0.000</b>	Significant
IAC => KNK	0.827	0.825	0.065	12.751	<b>0.000</b>	Significant
STI => IAC => KNK	0.347	0.370	0.076	4.592	<b>0.000</b>	Significant

Source: Data processed using PLS 3.0, 2022

## 5 Discussion

### 5.1 The Influence of Technology and Innovation Strategy on the Financial Performance of Private Hospitals in East Java

According to the test results presented in Table 5, the influence of the technology and innovation strategy on financial performance shows a result indicating a positive standardized coefficient of -0.487 and a t-Statistic of  $0.664 < t\text{-table} (1.96)$  and a P Value of  $0.507 > 0.05$ . Therefore, **hypothesis H1 is rejected**. This can be interpreted as demonstrating that the influence of the technology and innovation strategy on financial performance does not have a significant effect. So, the proposed hypothesis (namely: “technology and innovation strategy influences the financial performance of private hospitals in East Java”) is not supported by the findings of this study. The findings of this study related to the technology and innovation strategy variable show that it has no significant influence on financial performance which is in line with previous research conducted by Rahmawaty (2001) and Bigliardi (2013) which stated that the technology and innovation strategy had no effect on financial performance. This is because, to implement an effective and efficient innovation strategy, an increase in resources capable of implementing it is required, namely by increasing intellectual capital to be able to obtain a high level of profitability; this is because innovation cannot be implemented without an increase in competent resources.

This explanation is also supported by research by Amat et al., (2013) which demonstrates that, in order to improve optimal financial performance, it is necessary to have factors such as business quality, innovation, and internal improvement of the company through increasing its resources; furthermore, all of these factors will support each other in increasing sustainable growth of company performance. Based on the results of his research, it is also stated that the non-fulfillment of one of these factors will cause obstacles to the growth of the company’s performance. Research from Busquets and Myrthianos (2015) also explains the comparison between innovation strategy and intellectual capital on the growth of financial performance in companies in Spain. The results of the study state that, without an increase in intellectual capital, the technology

and innovation strategy cannot effectively influence the growth of financial performance. This, therefore, supports the results of this study which state that the intellectual capital variable is indeed suitable to be used to mediate the relationship between technology and innovation strategy and financial performance.

With the increase in access to and quality of hospital services, it is necessary to evaluate the hospital's minimum service standards, and examine whether these service standards are still relevant for hospitals with the various innovations that have been carried out, in case these standards are a barrier to the development of innovations put forward by hospitals. This innovation problem should be a separate concern for the stakeholders involved, so that many hospitals continue to develop and not collapse. This is also the message stated in Law No. 44 of 2009 concerning hospitals which was the basis for the formation of a new hospital paradigm which has as its main task comprehensively serving patients (sick people) and 'people who are not sick' as well as those who have passed away, and to do this effectively, efficiently, and economically. Some important things related to the development of innovation by hospitals are: the need for regulations governing these innovations that have the force of law; the availability of appropriate guidelines or standards (regulations/guidelines/standards that must follow existing developments); the availability and competence of human resources that support the development of innovations that can be carried out, in this case resources related to technology; and the need for encouragement and assistance from relevant stakeholders so that these health innovations can become the culture found in existing hospitals.

## **5.2 The Influence of Technology and Innovation Strategy on Financial Performance Mediated by Intellectual Capital in Private Hospitals in East Java**

Based on the test results in Table 5, the effect of intellectual capital as an intervening variable on the indirect relationship between the technology and innovation strategy on financial performance yields results indicating a positive standardized coefficient of 0.347 and t-statistics of  $4.592 > t\text{-table} (1.96)$  and P Value of  $0.000 < 0.05$ . Therefore **hypothesis H4 is accepted**; it can be interpreted that intellectual capital, as an intervening variable, is proven to be able to mediate an indirect relationship between technology and innovation strategy on financial performance with a positive direction of influence. So it can be concluded that, when it is linked directly to the innovation strategy, it has an insignificant effect on financial performance, but when it is mediated by the intellectual capital variable in an indirect relationship, the result shows that the technology and innovation strategy variable has an influence on financial performance that is mediated by intellectual capital which has a positive and significant effect. So the proposed hypothesis related to, "intellectual capital mediates the effect of technology and innovation strategy on financial performance" gets support with a positive direction of influence in this study. As for the demonstrated direct relationship between the technology and innovation strategy and financial performance, the effect is not significant; meanwhile the direct relationship between the technology and innovation strategy and intellectual capital is demonstrated to have a positive and significant effect; and then, the effect of intellectual capital on financial performance is proven to be positive and significant, so it can be said that there is perfect or complete or full mediation, meaning that the independent variable

is not able to significantly influence the dependent variable without going through the mediator variable.

The finding of an intervening variable—intellectual capital—that mediates an indirect relationship between technology and innovation strategy on financial performance has been demonstrated to have a positive and significant effect in this study in accordance with previous research conducted by Hariyati and Tjahjadi (2017), which also proved that intellectual capital is important influence on the relationship between innovation strategy and financial performance. To achieve good performance, private hospitals in East Java must have a competitive advantage. Private hospitals in East Java in general are always making breakthroughs in terms of innovative services that are accessible to customers and give them satisfaction. Product and process innovation requires the role of intellectual capital in the form of resources that have reliable competencies; for example, increasing the competence of the doctors and nurses that the hospital has or by opening new polyclinics. Therefore, the implementation of an technology and innovation strategy requires competent intellectual capital. Innovation is the creation of unique products or services and service efficiency as well as new ideas for dealing with the latest changes in service needs in the face of increasingly fierce competition. Product innovation—which in the case of hospitals is like the latest service innovation—is new products or services introduced to the market to meet market needs that usually apply the latest technology and are based on public health needs.

In this study, intellectual capital is a combination of three main elements which, in this study, are intellectual capital variables that serve as indicators, namely human capital, structural capital, and relation capital related to knowledge and technology. Intellectual capital provides added value for private hospitals in the form of a unique competitive advantage. The era of globalization, product and process innovation, information technology, and intense business competition in this century has forced all kinds of entities to change the way they run their businesses. To prevail in the fact of this competition, private hospitals must quickly change their strategy from labour-based business, which is considered less efficient, to knowledge-based business, which is more efficient in maximizing company profits, so the main characteristics of the entity are: become a knowledge or science-based entity. This explanation is also supported by the findings of Gamboa et al., (2022) who showed that intellectual capital is a strong foundation for the formation of knowledge-based businesses as implemented by the city of Arequipa which was the location of their research. The study also explains that the formation of good intellectual capital will have an impact on increasing service efficiency, improving institutional structures, and developing and evaluating better service processes so that they can have an impact on financial performance.

Financial performance, which is influenced by product attributes, customer relationships, and brand image, has an impact on the need for competent intellectual capital. Private hospitals in East Java are very concerned about the importance of intellectual capital. This can be seen from the empowerment related to human capital, structural capital, and customer capital. Almost all private hospitals in East Java are considered to have done very well in empowering and financing intellectual capital, which can be seen from the direct relationship between intellectual capital and financial performance which indicates a significant positive influence. The implementation of empowerment

and financing of intellectual capital is expected to increase the indirect influence of the technology and innovation strategy on the financial performance of private hospitals in East Java, so the innovation strategy—both in terms of technological process innovation and service product innovation—that is carried out by the hospital can be realized with the presence of competent intellectual capital, which is expected to increase the profits obtained by the hospital. This supports the RBT theory which states that intellectual capital is important for the relationship between technology and innovation strategy and financial performance. Non-financial performance and financial performance can be achieved if there is qualified intellectual capital. Intellectual capital meets the criteria as a unique resource capable of creating competitive advantage in formulating strategies so as to create value for the business. This is because to achieve this, reliable knowledge and information is required.

## 6 Conclusions and Suggestions

### 6.1 Conclusions

Based on the results of this research, several conclusions can be reached as follows:

1. Technology and Innovation strategy proved to have no significant effect on the financial performance of private hospitals in East Java. This is because implementing an effective and efficient technology and innovation strategy requires an increase in the resources capable of doing so, namely by increasing intellectual capital in order to be able to obtain a high level of profitability; this is because innovation cannot be implemented without an increase in competent resources. With the increase in access to and quality of hospital services, it is necessary to evaluate the hospital's minimum service standards, and whether these standards are still relevant for hospitals with the various innovations that have been carried out. This is done in case the standards are a barrier to the development of the innovations put forward by hospitals. This innovation problem should be a separate concern for the stakeholders involved, so that many hospitals continue to develop and not collapse.
2. Intellectual capital as an intervening variable is demonstrated to be able to mediate an indirect relationship between technology and innovation strategy and financial performance with a positive direction of influence. Therefore, it can be said that perfect or complete or full mediation occurs, meaning that the independent variable is not able to significantly influence the dependent variable without going through the mediator variable. Intellectual capital is important for the relationship between technology and innovation strategy and financial performance. To achieve good performance, private hospitals in East Java must have a competitive advantage. These hospitals, in general, always have to make breakthroughs in terms of innovative service that are accessible to customers and provide them with satisfaction. Product and process innovation requires the role of intellectual capital in the form of resources that have reliable competencies; for example, increasing the competence of doctors and nursing staff that hospitals have or by opening new polyclinics. Therefore, the implementation of a sustainable innovation strategy requires the role of competent intellectual capital. Innovation is the creation of unique products or services and service efficiency as

well as new ideas for dealing with the latest changes in service needs in the face of increasingly fierce competition.

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