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The effect of intellectual capital on competitive advantage and financial performance

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A B S T R A C T

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Financial performance is an evaluation of a company's assets, liabilities, equity, expenses, revenues, and profitability. This evaluation provides an overview of the company's overall financial health during a certain period. Resource Based Theory states several factors that can affect financial performance, namely intellectual capital and competitive advantage. This research was conducted with a quantitative approach. The observed population of this research is all BPRs in Bali Province which are still operating in 2017 - 2021. Determination of the sample in this study using the census method or saturated sample so that the sample used in this study was 133 BPRs in Bali Province. The analysis technique used in this research is path analysis with Eviews version 9.0 software. The test results show that intellectual capital has no effect on financial performance, intellectual capital has a positive effect on competitive advantage, competitive advantage has a positive effect on financial performance and competitive advantage is able to mediate the effect of intellectual capital on financial performance. The results of this study are expected to contribute to various interested parties, namely the development of Resource Based Theory as a theoretical benefit and BPR management, government, OJK, society and the banking industry as practical beneficiaries.

1. Introduction

Financial performance has an important role in business development in the company. Companies must have a healthy and efficient financial performance to earn profits (Bandyopadhyay, 2022). Measurement of financial performance is very important, including in the type of banking business. Banks as intermediary institutions are very important to measure financial performance because the basis for bank operations is the trust of the public in banks and vice versa. Banking as the core of financial intermediaries plays an important role in local development and economic activity (Chen et al., 2020). The slowdown in economic growth in a country will indirectly occur due to a decrease in the amount of credit disbursed due to the prudent attitude of the bank. Analyses need to be carried out so that possible financial difficulties and even banking business failures can be detected as early as possible (Kazbekova et al., 2020).

The financial performance of rural banks (BPR) in Indonesia as seen from the NIM ratio from 2017 to 2021 has decreased in 2017 to 10.859 percent and experienced a slight increase in 2018 to 10.868 percent. In 2019, the NIM of BPRs in Indonesia decreased to 9.452 percent, in 2020 it was 8.69 percent and in 2021 the NIM of BPRs in Indonesia still decreased to 8.139 percent. Rural Banks are one type of bank that exists in the banking industry in Indonesia apart from commercial banks. From 2017 to 2021, the number of BPRs liquidated in Indonesia is 41 BPRs throughout Indonesia. This is quite a large number for the closure of a rural bank that is engaged in the welfare of the people.

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In 2017 the NIM of BPRs in Bali Province was 8.121 percent, which decreased in 2018 to 7.507 percent. In 2019 the NIM of BPRs in Bali Province increased by 1.573 percent to 9.08 percent, but in 2020 the NIM of BPRs in Bali Province decreased by 3.18 percent to 5.9 percent, and in 2021 the NIM of BPRs in Bali Province still decreased from the previous year to 5.35 percent. The NIM data of BPRs in Bali Province from 2017 - 2021 shows that BPRs in Bali Province have not been able to show an increase in performance every year so that there is still a possibility of BPR business failure in Bali Province.

Bali Province is one of the provinces that has a large population of BPRs compared to other regions of Indonesia besides the island of Java. Bali Province is also one of the provinces whose main source of income comes from the tourism sector (Srinadi and Putri, 2022). Based on the Bank Indonesia report, Bali's economy only grew by -10.98 percent in the second quarter of 2020, lower than the first quarter of 2020 of - 1.14 percent. When comparing it with the national economic growth in the same period of -5.32 percent, Bali's economic growth is also lower. The majority of the workforce and companies (especially in the tourism sector) in Bali experienced a decrease in the ability to pay credit. The decline in customers' ability to pay causes a decrease in interest income for BPRs which will directly impact the bank's financial performance (Srinadi and Putri, 2022).

The Financial Services Authority (OJK) in 2021 recorded that the assets of rural banks (BPR) in Bali Province grew by 8.62 percent. Islamic people's financing banks (BPRS) grew by 14.16 percent during 2021. Loans disbursed by BPRs grew by 5.24 percent while BPRS credit growth was 12.20 percent during 2021. On the other hand, the Non Performing Loan (NPL) ratio of BPRs in Bali from 2017 is above 5 percent, which is above the provisions of the OJK. In 2017 the NPL of BPRs in Bali Province was 6.77 percent and increased in 2018 to 8.11 percent. In 2019 the NPL of BPRs in Bali Province decreased from the previous year to 7.58 percent, in 2020 it was 7.50 percent and in 2021 the NPL of BPRs in Bali Province was 6.58 percent. During the period 2017-2021, there were four problematic BPRs, namely one in Denpasar City, two in Badung Regency and one in Tabanan Regency.

OJK revoked the operating license of the rural bank (BPR) because it had entered the status of a Bank Under Supervision. The condition of BPRs in Bali Province in general over the past 5 years has faced the risk of increasing NPLs and declining profitability. BPRs have a higher level of vulnerability because their capital, resources, and management systems are not as good as commercial banks, making them very risky when facing crisis situations. BPRs must receive special attention in order to maintain their function and performance (Dewi & Yudantara, 2022). BPRs are required to innovate more to be able to develop their business, carry out business strategies to improve financial performance.

Resource Based Theory (RBT) states that firm performance is driven by the unique resources owned by the firm, both tangible and intangible resources (Barney, 1991). In today's information- and knowledge-based economy, intangible assets, especially intellectual capital, are gradually replacing physical capital as an important production factor and as a driver of sustainable long-term profitability (Clarke & Gholamshahi, 2017). Intellectual capital is an important strategic asset (Kehelwalatenna & Premaratne, 2014), which plays an important role in organisational financial performance and sustainability (Meles et al., 2016). The three main components of intellectual capital include: Human Capital (HC), Structural Capital (SC), and Relational Capital (RC) (Sveiby, 1997). Human capital consists of expertise, skills, experience, and training received by employees during their work. Structural capital includes organisational resources such as management measures, approaches, strategies and databases. Relational Capital refers to the company's intellectual assets that help the company to build, manage and maintain external relationships, namely relationships with customers, suppliers, marketing channels, and stakeholders (Shahzad et al., 2020) to improve financial performance.

RBT underlines the special importance of developing internal resources for optimal company performance (Barney, 1991). Research on intellectual capital on performance conducted by Singh et al., (2016); Sardo and Serrasqueiro (2017); Nawaz & Haniffa (2017); Tiwari and Vidyarthi (2018); Khan, Yang and Waheed (2019); Ousama, Hammami and Abdulkarim (2020); Soewarno and Tjahjadi (2020); Mahaputra et al., (2021); Wang, Wang and Liang (2014); Tegegne (2022) found that intellectual capital has a positive and significant effect on financial performance. On the other hand, research by Mehralian et al. (2012); Dzenopoljac et al. (2017); Ozkan, Cakan and Kayacan (2017); Hamdan (2018); Mahanavami et al. (2019); Cahyaningrum and Atahau (2021); and Mollah and Rouf (2022) found that intellectual capital has no significant relationship with bank financial performance.

The difference in research results between intellectual capital and financial performance is the motivation for using competitive advantage as a mediating variable. Well-managed intellectual capital will increase competitiveness in the banking industry to increase competitive advantage and have an impact on improving financial performance. Based on RBT developed by (Barney, 1991), it states that intellectual capital which is a valuable, rare, inimitable, and non-substitutable resource or abbreviated as VRIN becomes a strategic asset that contributes to competitive advantage. Competitive advantage can help maintain financial performance from various risky economic situations for long-term development. Research on intellectual capital on competitive advantage conducted by Chahal and Bakshi (2014); Yaseen, Dajani and Hasan, (2016); Khan, Yang and Waheed (2019); and Obeidat et al., (2021) found that intellectual capital has a positive and significant effect on competitive advantage.

Porter (1985: 3) reveals that competitive advantage is an ability obtained through a process of characteristics and resources of a company that refers to the existence of organisational factors to improve performance that is superior to other companies or competitors both in the field of industry and similar market segmentation. Research from (Newbert, 2008) was conducted to examine the relationship between value, scarcity, competitive advantage, and performance. The results show that value and scarcity are related to competitive advantage, competitive advantage is related to performance. (Barney, 1991) argues that firms that possess and exploit valuable and scarce resources and capabilities will achieve competitive advantage. Competitive advantage research on financial performance was conducted by Örnek and Ayas (2015); Jain, Vyas and Roy (2017); Haseeb et al., (2019); Khan, Yang and Waheed (2019); Mutuku, Muathe and James (2019); Kim et al., (2020) found that competitive advantage has a significant effect on financial performance.

2. Research Methods

This study aims to examine the effect of intellectual capital on risk management, competitive advantage and financial performance of BPR in Bali Province. The variables in this study include intellectual capital, risk management, competitive advantage and financial performance. The hypothesis will be tested using panel data analysis, in addition to testing the direct effect, the indirect effect will also be tested. The application of panel data analysis is because in this study there are mediating variables and all variables used are observed variables. The object of this research is intellectual capital associated with risk management and competitive advantage and financial performance. The banks chosen as research locations are BPRs in Bali Province. The research was conducted in the period 2017 – 2021

2.1 Theoretical Model Development

Based on the influence between variables, theoretically a model is made in the form of a path diagram as follows:

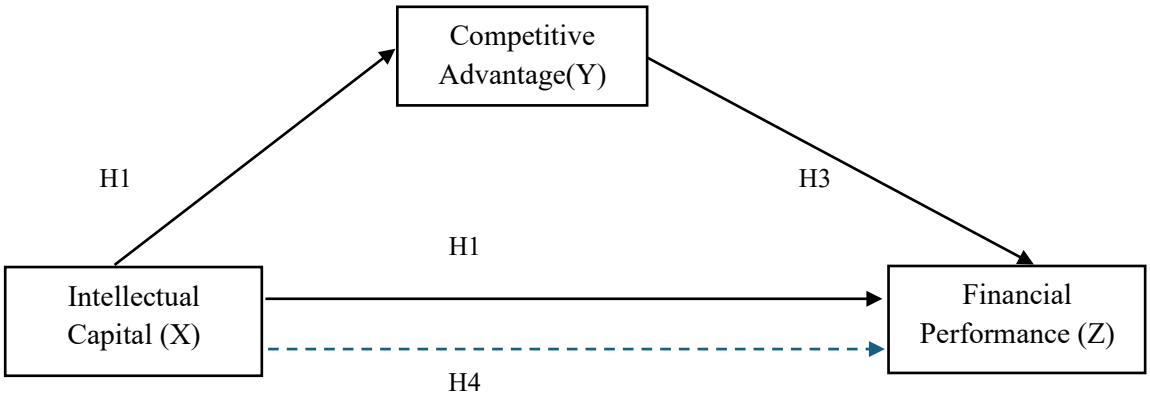

Fig. 1. Path Diagram of the Theoretical Research Model

Furthermore, the figure above can be expressed in the form of equations as follows:

1) $Y = \beta_0 + \beta_1 X + \varepsilon_i$ (Substructure 1);
2) $Z = \beta_2 + \beta_3 X + \beta_4 Z + \varepsilon_i$ (Substructure 2)

Research hypothesis

1) **H_1:** *Intellectual capital has a positive and significant effect on financial performance.*
2) **H_2:** *Intellectual capital has a positive and significant effect on competitive advantage.*
3) **H_3:** *Competitive advantage has a positive and significant effect on financial performance.*
4) **H_4:** *Competitive advantage can mediate the effect of intellectual capital on financial performance.*

Variable Measurement

1. Intellectual Capital

   Intellectual capital is an intangible asset that exists in BPRs in Bali Province in the form of human capital, structural capital and relational capital to increase the ability to compete and improve the financial performance of BPRs in Bali Province for the period 2017-2021. In this study, intellectual capital is proxied using MVAIC = CEE + HCE + SCE + RCE from Ulum, Ghozali and Purwanto (2014).

2. Financial Performance

Financial performance is the result of business activities in the form of BPR income in Bali Province obtained from the difference between interest earned and interest incurred by BPRs in Bali Province for the period 2017-2021. Net Interest Margin (NIM) is used to measure the ability of bank management to manage its productive assets to generate net interest income (Kaupelytė & Kairytė, 2016; Haris et al., 2019; Derbali, 2021; O'Connell, 2022). The measurement scale used is a ratio scale. The calculation of NIM is as follows:

$$\text{NIM} = \frac{\text{Net Interest Income}}{\text{Productive assets}}$$

3. Competitive Advantage
Competitive advantage is the ability obtained through the characteristics and resources of BPRs in Bali Province to have higher financial performance than competitors in the BPR industry in Bali Province for the period 2017 - 2021. The measurement scale used is a ratio scale. Calculation of competitive advantage using a modified market share from previous researchers (Sadiq & Nosheen, 2020), namely:

$$\text{Market Share} = \frac{\text{Total loans/ BPR unit}}{\text{Total Loans/Industry Unit BPR}}$$

The observed population of this study is all BPRs in Bali Province that are still operating. There are 133 BPRs in Bali Province that are still operating. The sampling technique used is saturated sampling (census) so that the sample used in this study is 133 BPRs in Bali Province. The type of data used in this study is quantitative data. The data source used is secondary data obtained through the official website of the Financial Services Authority (OJK) www.ojk.go.id. The data used is panel data (cross section and times series). The data collection method used is a review of company records (Sekaran and Bougie, 2016: 37) and in-depth interviews with several BPRs to confirm the research results. The analysis technique used in this research is path analysis with Eviews version 9.0 software.

3. Results and Discussion

Path Analysis with a panel regression model is used to see the effect between variables with a path structure. The effect of the independent variable on the dependent variable through the mediating variable. The following are the stages of interpretation of the analysis.1. Classical Assumption Test Results

a. Normality Test

Table 1
Normality Test

Residual	Jarque-Bera	Probability
Model 1	6864.353	0.000
Model 2	27.021	0.000

(Source: Output Eviews,2024)

From testing using the Jarque-Bera test, the probability value of each model is smaller than α (0.05), it is concluded that the residual distribution is not normally distributed in model 1, and model 2.

b. Multicollinearities Test

Table 2
VIF value Multicollinearity test model

Variable	Model 2 (Z2)	Model 3 (Y)
X (Intellectual Capital)	1.000000	1.106763
Y (Competitive Advantage)		1.106763

(Source: Output Eviews, 2024)

Based on the table above, it is found that the VIF number of each independent variable is less than 10, so the assumption can be fulfilled, which means that there is no strong correlation between the independent variables (no multicollinearity).

c. Heteroskedasticities Test

Table 3 shows the probability value of model 1 is greater than α (0.05), it is concluded that the residual variance of the model is homogeneous. But the residual variation of model 2 is not yet homogeneous with a probability value <0.05.

Tabel 3
Heteroskedasticities Test

Residual	Obs×R-squared	Prob. Chi-Square(1)
Model 1	0.842722	0.3586
Model 2	13.19739	0.0014

(Source: Output Eviews, 2024)

d. Autocorrelation Test

Tabel 4
Autocorrelation LM test

Residual	Obs×R-squared	Prob. Chi-square
Model 1	9.885319	0.0071
Model 2	41.85139	0.0000

(Source: Output Eviews, 2024)

Based on the table above, the probability value is smaller than α (0.05), so the decision is taken to accept H0, which means that there is autocorrelation between residuals (assumptions are not met for models 1 and 2).

Regression model selection

Table 4
Panel Regression Model Selection Results

Uji	Model 1		Model 2	
	Statistics	Conclusion	Statistics	Conclusion
Chow	132.276 (0.0000)	FEM	4.738 (0.0000)	FEM
Hausman	52.420 (0.0000)	FEM	13.994 (0.0000)	FEM
LM	1058.767 (0.0000)	REM	223.026 (0.0000)	REM

(Source: Output Eviews, 2024)

It can be concluded that based on these three tests, FEM (Fixed Effect Model) was selected for model 1 and model 2.

Panel Data regression test results

e. Model Test

The regression test results are shown in Table 5:

Table 5
Simultaneous effect test results

Model	F-statistic	Prob(F-statistic)	Information
Model 1 (FEM)	145.716	0.000	Significant
Model 2 (FEM)	5.285	0.000	Significant

(Source: Output Eviews, 2024)

Based on the table above, it can be concluded that:

- Model 1 has a probability value less than α 5% (0.000 < 0.050), exogenous variable X (Intellectual Capital) has a significant effect on endogenous variable Y (Competitive Advantage). - Model 2 has a probability value less than α 5% (0.000 < 0.050), exogenous variables X (Intellectual Capital), and Y (Competitive Advantage) have a significant effect on endogenous variable Z (Financial Performance).

f. Hypothesis Test

Effect of Intellectual Capital on Financial Performance

The results of the panel regression test of the FEM model are shown in Table 6:

Table 6. Hasil Analysis Regression

Variabel	Beta	t-statistic	Prob. t	Information
X (Intellectual Capital)	0.006	7.118	0.000	Significant
Constanta	0.507			
R-squared	= 0.973			

(Source: Output Eviews, 2024)

Based on the table above, it can be concluded that:
From the R-squared value shows a value of 0.973. This means that variable Y (Competitive Advantage) is explained by variable X (Intellectual Capital) by 97.3%, while the remaining 2.7% is influenced by variables outside the independent variables studied. Regression model is as follows,

$$Y = 0.507 + 0.006\ X + \varepsilon_i$$

The calculated statistical value shows that:

Variable X (Intellectual Capital) has a positive and significant effect on variable Y (Competitive Advantage) with a prob t value less than α (0.000 <0.050). The positive coefficient indicates that an increase in intellectual capital can significantly increase competitive advantage.

The Effect of Intellectual Capital and Competitive Advantage on Financial Performance

The results of the panel regression test of the FEM model are shown in Table 7 as follows:

Table 7
Regression Result

Variabel	Beta	t-statistic	Prob. t	Information
X (Intellectual Capital)	0.018	1.056	0.292	Not significant
Y (Competitive Advantage)	1.682	2.084	0.038	Significant
Constant	6.961			
R-squared	= 0.572			

(Source: Output Eviews, 2024)

Based on the table above, it can be concluded that:

From the R-squared value shows a value of 0.572. This means that variable Z (Financial Performance) is explained by variables X (Intellectual Capital) and Y (Competitive Advantage) by 57.2%, while the remaining 42.8% is influenced by variables outside the independent variables studied.

Regression equation:

$$Z = 6.961 + 0.018\ X + 1.682\ Y + \varepsilon_i$$

The calculated statistical value shows that:

- Variable X (Intellectual Capital) has no effect on variable Z (Financial Performance) with a prob t value greater than α (0.292 > 0.050).
- Variable Y (Competitive Advantage) has a positive and significant effect on variable Z (Financial Performance) with a prob t value less than α (0.000 <0.050). The positive coefficient indicates that an increase in competitive advantage can improve financial performance.

Testing the Goodness of Fit model using the coefficient of total determination. The total diversity of data that can be explained by the model is measured by the formula with the following results

$$R^2{}_m = 1 - \left(\left[1 - {R_1}^2\right] \times \left[1 - {R_2}^2\right]\right)$$
$$R^2{}_m = 1 - ([1 - 0.973] \times [1 - 0.572]) = 0.988$$

The results of the $R^2{}_m$ calculation indicate that the data diversity that can be explained by the model is 0.988 or in other words, 0.6% of the information contained in the data can be explained by the model. While the remaining 98.8% diversity is explained by other variables (which are not yet included in the model).

Indirect Effect Hypothesis

Table 9
Hypothesis Testing Results of Indirect Influence

Variable	Sobel (p-value)	Information
X → Y → Z	2.000 (0.046)	Significant

(Source: Output Eviews, 2024)

The indirect effect between variable X (Intellectual Capital) on variable Z (Financial Performance) through variable Y (Competitive Advantage) is significant, with a sobel test p-value of 0.046 less than 0.05. Competitive advantage variable mediates the effect of intellectual capital on financial performance (including full mediation because the effect of intellectual capital on financial performance is not significant).

4. Discussion

The effect of intellectual capital on financial performance

This study found that intellectual capital has no effect on financial performance. This shows that Hypothesis 1 (H1) which states that intellectual capital has a positive and significant effect on financial performance is rejected. The indicators of intellectual capital owned by BPRs in Bali Province have no effect on their financial performance, which means that changes in intellectual capital owned by BPRs in Bali Province are not able to affect the financial performance of BPRs in Bali Province. These results indicate that the value added of funds spent by the company for employees and costs incurred for marketing does not contribute to improving the financial performance of the company.

The findings of this study do not support Resource Based Theory which states that intellectual capital is an intangible resource that can produce superior financial performance. The results of this study indicate that BPRs in Bali Province have not used their intellectual capital effectively and efficiently. The results of in-depth interviews with several BPRs in Bali Province stated that: (1) The salary system at BPRs in Bali Province is not always measured by workload, productivity results and competence but is measured by the increase in financial performance proxied by NIM, causing low human capital so that the potential level of satisfaction and the level of loyalty of human capital decreases and cannot be relied upon to produce superior performance; (2) Marketing costs incurred by BPRs are determined by the amount of NIM generated in the previous year. Marketing costs will increase if the company generates an increase in financial performance. Marketing costs at BPRs are usually in the form of entertainment costs, rewards to customers and the cost of organising events which are not too large when compared to competitors such as commercial banks that incur higher marketing costs which make the opportunity to attract people to choose BPRs smaller so that BPR's relationship capital has not been able to affect the financial performance of BPRs in Bali Province; (3) BPRs have limitations, for example, they cannot open current accounts, have ATMs, or operate mobile banking like commercial banks, so they cannot serve customer transactions comfortably, easily, and quickly. In the digital era all markets apply efficiency, and many online loans can be accessed easily and quickly, technological developments that have not been applied to BPRs cannot produce superior financial performance.

The findings of this study are in line with previous research conducted by Mehralian et al. (2012) which states that intellectual capital has no effect on financial performance, one of which is caused by a lack of employee training, continuous training programmes are an important tool for employee and manager performance. Dzenopoljac et al. (2017) stated that the financial performance of leading companies in the Arab world is not fully influenced by intellectual capital. Ozkan, Cakan and Kayacan (2017) state that intellectual capital has no effect on financial performance, banks operating in the banking sector must use their financial and physical capital if they want to achieve better financial performance. Hamdan (2018) states that human capital as one of the components of intellectual capital has no effect on the financial performance of companies in Bahrain. Mahanavami et al., (2019), Cahyaningrum and Atahau, 2021) and Mollah and Rouf (2022) who found that intellectual capital has no effect on the company's financial performance which indicates that the use of intangible assets in the company has not been used effectively and efficiently.

The effect of intellectual capital on competitive advantage

This study found that intellectual capital has a positive and significant effect on competitive advantage, which means that the Second Hypothesis (H2) is accepted. This means that BPRs in Bali Province have been able to manage intellectual capital well so that it can contribute positively to competitive advantage, the better the management of intellectual capital, the better the competitive advantage generated at BPRs in Bali Province. Intellectual capital has been recognised as the most important source of value creation and competitive advantage of organisations, including the financial services industry (Nawaz & Haniffa, 2017).

The results of this study support Resource Based Theory which states that intellectual capital which is a valuable, rare, inimitable, and non-substitutable resource or abbreviated as VRIN becomes a strategic asset that contributes to competitive advantage. Intellectual capital contributes to increasing competitive advantage through value creation from unique resources and capabilities. Intellectual capital plays an important role in creating and maintaining competitive advantage.

The results of this study are in line with previous research conducted by Obeidat et al. (2021), stating that intellectual capital has a positive and significant effect on competitive advantage, the company's ability to integrate and create harmony between intellectual capital components can help companies achieve competitive advantage. Competitive advantage is achieved by companies if they succeed in mobilising intellectual assets in the form of knowledge, technological skills, experience, and strategic capabilities. Khan, Yang and Waheed (2019) stated that intellectual capital is a factor that can affect competitive

advantage in a company because intellectual capital includes knowledge, expertise, experience, and various other intangible assets that can contribute to the creation of competitive advantages for companies in various ways.

An organisation in any field in order to have an organisational advantage is recommended to focus on resources that are rare, valuable, and certainly difficult to imitate. Through good intellectual capital management, the organisation can gain more innovative individuals with good skills. With the presence of innovative and good intellectual capital, it can add more value to the organisation to gain competitive advantage.

The effect of competitive advantage on financial performance

The results of this study indicate that competitive advantage has a positive and significant effect on financial performance. This means that the better the competitive advantage owned by BPRs in Bali Province, the better their financial performance. Competitive advantage can be defined as a collection of various items that provide a unique and superior position for companies to differentiate themselves from competitors in the market (Udriyah, Tham and Ferdous Azam, 2019).

Resource Based Theory is a theory that explains that company performance will be optimal if the company has a competitive advantage so that it can produce superior financial performance (Barney, 1991). Competitive advantage is something that is inherent in the company and difficult to imitate by other companies. Companies that strive to improve their financial performance must also be active in identifying, developing, and maintaining competitive advantages that exist in the market share. A sustainable competitive advantage can help organisations maintain a strong market position in the long term. This is essential to ensure sustainable growth and profitability. Companies with competitive advantage tend to create barriers that allow them to reduce competition and achieve greater performance than competitors (Kanuri & McLeod, 2016).

BPR in Bali Province is able to become an intermediary institution between people who have advantages with people who need funds by looking at community conditions more closely than commercial banks. BPR approaches by directly visiting offices, markets, shopping environments and other crowded centres. Competitive advantage as measured by market share, illustrates that BPRs are able to dominate the market with a good strategy so that they can channel quality loans to earn income from interest so as to improve the financial performance of BPRs in Bali Province.

The results of this study are in line with research conducted by Jain, Vyas and Roy (2017) who found that competitive advantage has a positive effect on performance. Khan, Yang and Waheed (2019); Mutuku, Muathe and James (2019); and Kim et al., (2020) state that competitive advantage has a positive and significant effect on the company's financial performance. Companies that have a competitive advantage that can affect the improvement of their financial performance. Competitive advantage will improve the company's financial performance, not the other way around (Cao, Berkeley and Finlay, 2014). So it is recommended for companies to pay more attention to intangible assets properly to gain a competitive advantage over their competitors which will ultimately lead to superior financial performance. Effective and sustainable competitive advantage creates conditions that support better financial performance, including increasing profitability, revenue growth, reducing costs, and helping companies to create and maintain a strong image in the market. With the evidence of a significant positive effect between competitive advantage variables and financial performance, competitive advantage is not only an important factor in creating good corporate financial performance, but also in maintaining sustainable growth and profitability.

The effect of intellectual capital on competitive advantage and financial performance

This study found that competitive advantage is able to mediate the relationship between intellectual capital and financial performance of BPRs in Bali Province. This shows that competitive advantage in BPRs in Bali Province can increase intellectual capital in the form of human capital, structural capital and relationship capital so as to improve the financial performance of BPRs. Competitive advantage plays an important role in mediating the relationship between intellectual capital and financial performance of BPRs in Bali Province.

Resource Based Theory suggests that firms can have superior performance from the competitive advantage created by the firm's special resources and capabilities (Lippman & Rumelt, 1982; Wernerfelt, 1984; Barney, 1991; Peteraf, 1993). Competitive advantage is a strategy so that products and services can continue to exist in the market and be able to face competition and the ultimate goal is to ensure the company's ability to survive. A company that excels in competition means a company that is able to detect all the weaknesses and strengths of the internal and external environment and then in an integrated manner can formulate strategies that can actually be implemented in the form of tactics in increasing service sales by winning the market and continuously evaluating and controlling. BPRs in Bali Province have a good competitive advantage so that they are able to manage intellectual capital well so as to improve their financial performance. In the era of globalisation and intense competition, combining intellectual capital with competitive advantage is a strategic and important step for BPRs to improve their financial performance.

5. Research Implications

5.1 Theoretical Implications

The results of this study provide an empirical contribution to the Resource Based Theory that part of the intellectual capital has an important role in the success of the company's performance. Although intellectual capital does not affect the financial performance of BPR, indirectly through competitive advantage can improve the financial performance of BPR. Competitive advantage is what differentiates a company from its competitors in the market and creates added value that can positively affect financial performance.

5.2 Practical Implications

The results of this study have important meaning for BPR because with the results obtained by this study, the results obtained competitive advantage that is able to mediate the effect of intellectual capital on financial performance, BPR should strive to make improvements in the intellectual capital it manages in order to become an advantage that allows it to compete better than its competitors so as to improve the financial performance of BPR. This can be done, among others, by increasing technological innovation, employee knowledge and skills in interacting with customers so as to improve the quality of services provided by BPRs. Higher service quality can increase customer satisfaction, which in turn can lead to better customer retention and increase BPR revenue. Utilising intellectual capital well, will enable BPRs to gain a competitive advantage in the market, which has a direct impact on better financial performance.

5.3 Research Limitations

This research attempts to build an integrated model of intellectual capital, risk management, competitive advantage and financial performance but the researcher realises that there are still some limitations that make this research imperfect. Some limitations in this study include: (1) The measurement model uses a financial basis, so that all variable measurements are calculated using financial data. For future researchers, it is expected to find a more appropriate measurement model regarding competitive advantage, risk management and intellectual capital using a survey method approach; (2) This research is limited to BPRs in Bali Province, further research can be developed in other financial institutions.

Summary

This study aims to analyse the effect of intellectual capital on financial performance directly. This study also analyses the effect of competitive advantage as a mediating relationship of intellectual capital on financial performance. Intellectual capital has no effect on financial performance. These results indicate that the good/bad implementation and management of intellectual capital is not able to improve the financial performance of BPRs in Bali Province in 2017-2021. These results indicate that the value added of funds spent by BPRs in Bali Province does not contribute to improving the company's financial performance. Intellectual capital has a positive effect on competitive advantage. These results indicate that BPRs in Bali Province are able to manage intellectual capital well so that it makes a positive contribution to competitive advantage, the higher the value of intellectual capital, the greater the competitive advantage of BPRs in Bali Province in 2017-2021. BPRs in Bali Province are able to manage and optimise intellectual capital so that they have a greater possibility of becoming rulers in their industry. Competitive advantage has a positive effect on financial performance. These results indicate that having a competitive advantage of BPRs in Bali Province has an effect on financial performance, which means that competitive advantage can sustainably maintain a strong market position so as to improve the financial performance of BPRs in Bali Province in 2017-2021. Competitive advantage is very important in improving the financial performance of BPRs in Bali Province. Competitive advantage is able to mediate the effect of intellectual capital on financial performance. This means that increasing intellectual capital through competitive advantage can improve financial performance. Intellectual capital contributes to increasing competitive advantage through value creation from unique resources and capabilities so that it will improve the financial performance of BPRs in Bali Province in 2017-2021.

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References

Bandyopadhyay, A. (2022). Bank Financial Performance and its Linkage with Capital: A Dynamic Panel Data Analysis of Public Sector Banks in India. *The Indian Economic Journal, 70*(3), 437–451. doi:10.1177/00194662221104752.

Barney, J.B. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management, 17*(1), 99–120. doi:10.1177/014920639101700108.

Cahyaningrum, A.D., & Atahau, A.D.R. (2021). Intellectual Capital and Financial Performance: Banks' Risk As the Mediating Variable. *Jurnal Manajemen dan Kewirausahaan, 22*(1), 21–32. doi:10.9744/jmk.22.1.21-32.

Cao, D., Berkeley, N., & Finlay, D. (2014). Measuring sustained competitive advantage from resource-based view: Survey of Chinese clothing industry. *Journal of Sustainable Development, 7*(2), 89–104. doi:10.5539/jsd.v7n2p89.

Chahal, H., & Bakshi, P. (2014). Effect of intellectual capital on competitive advantage and business performance: Role of innovation and learning culture. *International Journal of Learning and Intellectual Capital, 11*(1), 52–70. doi:10.1504/IJLIC.2014.059227.

Chen, Y. L., Chuang, Y. W., Huang, H. G., & Shih, J. Y. (2020). The value of implementing enterprise risk management: Evidence from Taiwan's financial industry. *The North American Journal of Economics and Finance*, *54*, 100926. doi:10.1016/j.najef.2019.02.004.

Clarke, T., & Gholamshahi, S. (2017). Developing human capital for knowledge based economies. *Innovation in the Asia Pacific: From Manufacturing to the Knowledge Economy*, 247–270. doi:10.1007/978-981-10-5895-0_12.

Derbali, A. (2021). Determinants of the performance of Moroccan banks. *Journal of Business and Socio-economic Development, 1*(1), 102–117. doi:10.1108/jbsed-01-2021-0003.

Dzenopoljac, V., Yaacoub, C., Elkanj, N., & Bontis, N. (2017). Impact of intellectual capital on corporate performance: evidence from the Arab region. *Journal of intellectual capital*, *18*(4), 884-903. doi:10.1108/JIC-01-2017-0014.

Hamdan, A. (2018). Intellectual capital and firm performance: Differentiating between accounting-based and market-based performance. *International Journal of Islamic and Middle Eastern Finance and Management, 11*(1), 139–151. doi:https://doi.org/10.1108/IMEFM-02-2017-0053.

Haris, M., Yao, H., Tariq, G., Malik, A., & Javaid, H. M. (2019). Intellectual capital performance and profitability of banks: Evidence from Pakistan. *Journal of Risk and Financial Management*, *12*(2), 56. doi:10.3390/jrfm12020056.

Haseeb, M., Hussain, H. I., Kot, S., Androniceanu, A., & Jermsittiparsert, K. (2019). Role of social and technological challenges in achieving a sustainable competitive advantage and sustainable business performance. *Sustainability*, *11*(14), 3811. doi:10.3390/su11143811.

Jain, P., Vyas, V., & Roy, A. (2017). Exploring the mediating role of intellectual capital and competitive advantage on the relation between CSR and financial performance in SMEs. *Social Responsibility Journal, 13*(1), 1–23. doi:10.1108/SRJ-04-2015-0048.

Kanuri, S., & McLeod, R.W. (2016). Sustainable Competitive Advantage And Stock Performance: The Case For Wide Moat Stocks. *Applied Economics, 48*(52), 5117–5127. doi:10.1080/00036846.2016.1170938.

Kaupelytė, D., & Kairytė, D. (2016). Intellectual Capital Efficiency Impact on European Small and Large Listed Banks Financial Performance. *International Journal of Management, Accounting and Economics, 3*(6), 367–377.

Kazbekova, K., Adambekova, A., Baimukhanova, S., Kenges, G., & Bokhaev, D. (2020). Bank risk management in the conditions of financial system instability. *Entrepreneurship and Sustainability Issues*, *7*(4), 3269. doi:10.9770/jesi.2020.7.4(46).

Kehelwalatenna, S., & Premaratne, G. (2014). Intellectual capital performance and its long-run behavior: The US banking industry case. *New Zealand Economic Papers, 48*(3), 313–333. doi:10.1080/00779954.2013.867796.

Khan, S.Z., Yang, Q., & Waheed, A. (2019). Investment in intangible resources and capabilities spurs sustainable competitive advantage and firm performance. *Corporate Social Responsibility and Environmental Management, 26*(2), 285–295. doi:10.1002/csr.1678.

Kim, J. H., Seok, B. I., Choi, H. J., Jung, S. H., & Yu, J. P. (2020). Sustainable management activities: A study on the relations between technology commercialization capabilities, sustainable competitive advantage, and business performance. *Sustainability*, *12*(19), 7913. doi:10.3390/su12197913.

Lippman, S.A., & Rumelt, R.P. (1982). Uncertain Imitability: An Analysis of Interfirm Differences in Efficiency under Competition. *The Bell Journal of Economics, 13*(2), 418. doi:10.2307/3003464.

Mahanavami, G. A., Wiksuana, W., Purbawangsa, I. B. A., & Rahyuda, H. (2019). Role of Relational Capital and Social Capital in Mediating the Effect of Asta-Brata-Based Human Capital in Financial Performance. *Opción: Revista de Ciencias Humanas y Sociales*, (21), 548-566.

Mahaputra, I. N. K. A., Wiagustini, N. L. P., Yadnyana, I. K., & Artini, N. L. G. S. (2021). Organization behavior, intellectual capital, and performance: A case study of microfinance institutions in Indonesia. *The Journal of Asian Finance, Economics and Business*, *8*(4), 549-561. doi:10.13106/jafeb.2021.vol8.no4.0549.

Mehralian, G., Rajabzadeh, A., Reza Sadeh, M., & Reza Rasekh, H. (2012). Intellectual capital and corporate performance in Iranian pharmaceutical industry. *Journal of intellectual capital*, *13*(1), 138-158. doi:10.1108/14691931211196259.

Meles, A., Porzio, C., Sampagnaro, G., & Verdoliva, V. (2016). The impact of the intellectual capital efficiency on commercial banks performance: Evidence from the US. *Journal of Multinational Financial Management*, *36*, 64-74. doi:10.1016/j.mulfin.2016.04.003.

Mollah, M.A.S., & Rouf, M.A. (2022). The impact of intellectual capital on commercial banks' performance: evidence from Bangladesh. *Journal of Money and Business, 2*(1), 82–93. doi:10.1108/jmb-07-2021-0024.

Mutuku, M.K., Muathe, S., & James, R. (2019). Mediating Effect of Competitive Advantage on the Relationship Between E-

commerce Capability and Performance: Empirical Evidence from Commercial Banks in Kenya. *European Journal of Business and Management, 11*(17), 48–57. doi:10.7176/EJBM/11-17-06.

Nawaz, T., & Haniffa, R. (2017). Determinants of financial performance of Islamic banks: an intellectual capital perspective, *Journal of Islamic Accounting and Business Research, 8*(2), 130–142. doi:10.1108/JIABR-06-2016-0071.

Newbert, S.L. (2008). Value, Rareness, Competitive Advantage, And Performance: A Conceptual-Level Empirical Investigation Of The Resource-Based View Of The Firm. *Strategic Management Journal, 29,* 745–768. doi:10.1002/smj.686.

O'Connell, M. (2022). Bank-specific, industry-specific and macroeconomic determinants of bank profitability: evidence from the UK. *Studies in Economics and Finance*, *40*(1), 155-174. doi:10.1108/SEF-10-2021-0413.

Obeidat, U., Obeidat, B., Alrowwad, A., Alshurideh, M., Masadeh, R., & Abuhashesh, M. (2021). The effect of intellectual capital on competitive advantage: The mediating role of innovation. *Management Science Letters*, *11*(4), 1331-1344. doi:10.5267/j.msl.2020.11.006.

Örnek, A.Ş., & Ayas, S. (2015). The Relationship between Intellectual Capital, Innovative Work Behavior and Business Performance Reflection. *Procedia - Social and Behavioral Sciences, 195*(July), 1387–1395. doi:10.1016/j.sbspro.2015.06.433.

Ousama, A.A., Hammami, H., & Abdulkarim, M. (2020). The association between intellectual capital and financial performance in the Islamic banking industry: An analysis of the GCC banks. *International Journal of Islamic and Middle Eastern Finance and Management, 13*(1), 75–93. doi:10.1108/IMEFM-05-2016-0073.

Ozkan, N., Cakan, S., & Kayacan, M. (2017). Intellectual capital and financial performance: A study of the Turkish Banking Sector. *Borsa Istanbul Review, 17*(3), 190–198. doi:10.1016/j.bir.2016.03.001.

Sadiq, R., & Nosheen, S. (2020). Determining the Impact of Intangible Assets on Intellectual Capital and Competitive Advantage in Banking. *Lahore Journal of Business, 9*(1), 105–144. doi:10.35536/ljb.2020.v9.i1.a5.

Sardo, F., & Serrasqueiro, Z. (2017). A European empirical study of the relationship between firms' intellectual capital, financial performance and market value. *Journal of Intellectual Capital, 18*(4), 771–788. doi:https://doi.org/10.1108/JIC-10-2016-0105.

Shahzad, F., Hussain Baig, M., Rehman, I. U., Latif, F., & Sergi, B. S. (2020). What drives the impact of women directors on firm performance? Evidence from intellectual capital efficiency of US listed firms. *Journal of intellectual capital*, *21*(4), 513-530. doi:10.1108/JIC-09-2019-0222.

Singh, S., Sidhu, J., Joshi, M., & Kansal, M. (2016). Measuring intellectual capital performance of Indian banks: A public and private sector comparison. *Managerial Finance*, *42*(7), 635-655. doi:10.1108/MF-08-2014-0211.

Soewarno, N., & Tjahjadi, B. (2020). Measures that matter: an empirical investigation of intellectual capital and financial performance of banking firms in Indonesia. *Journal of Intellectual Capital, 21*(6), 1085–1106. doi:10.1108/JIC-09-2019-0225.

Sveiby, K.E. (1997). The Intangible Assets Monitor. *Journal of Human Resource Costing & Accounting, 2*(1), 73–97. doi:10.1108/eb029036.

Tegegne, H.G. (2022). The Effect of Intellectual Capital Effciency on the Financial Performance of Commercial Banks in Ethiopia, Research Square [Preprint]. Available at: https://doi.org/10.21203/rs.3.rs-1501116/v1.

Tiwari, R., & Vidyarthi, H. (2018). Intellectual capital and corporate performance: a case of Indian banks. *Journal of Accounting in Emerging Economies, 8*(1), 84–105. doi:10.1108/JAEE-07-2016-0067.

Udriyah, U., Tham, J., & Azam, S. J. M. S. L. (2019). The effects of market orientation and innovation on competitive advantage and business performance of textile SMEs. *Management Science Letters*, *9*(9), 1419-1428. doi:10.5267/j.msl.2019.5.009.

Ulum, I., Ghozali, I., & Purwanto, A. (2014). Intellectual Capital Performance of Indonesian Banking Sector: A Modified VAIC (M-VAIC) Perspective. *Asian Journal of Finance & Accounting, 6*(2), 103. doi:10.5296/ajfa.v6i2.5246.

Wang, Z., Wang, N., & Liang, H. (2014). Knowledge sharing, intellectual capital and firm performance. *Management Decision, 52*(2), 230–258. doi:10.1108/MD-02-2013-0064.

Yaseen, S.G., Dajani, D., & Hasan, Y. (2016). The impact of intellectual capital on the competitive advantage: Applied study in Jordanian telecommunication companies. *Computers in Human Behavior, 62*, 168–175. doi:10.1016/j.chb.2016.03.075.