The Effect of Ability and Agility on Competitive Advantage: Its Implications on the Competitiveness of Grade XI Students of Vocational High Schools

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Abstract: This study aims to determine how much influence capability and agility have on competitiveness mediated by competitive advantage in students of State Vocational High School (SMK) 4 Cilegon. This study uses a descriptive causality design with quantitative methodology. The sample used is adjusted to the analysis method using the Structural Equation Model (SEM) of 190 respondents. Data collection techniques are primary data and secondary data. Data collection techniques are primary data and secondary data. Primary data is obtained through survey methods, secondary data is obtained through documentation. The analysis techniques used are descriptive statistics, inferential statistical analysis, validity and reliability tests, evaluation of reflective measurement models (outer models), evaluation of structural models (inner models), and evaluation of the goodness and suitability of the model. The results of this study indicate that the coefficient value of the Capability path to Competitiveness through Competitive Advantage is 0.144 positive value, with at statistics of 3.299> 1.96 and a P Value of 0.001 <0.05, so that it proves that Competitive Advantage is able to mediate the influence of Capability on Competitiveness. The coefficient value of the Agility path to Competitiveness through Competitive Advantage is 0.190 positive value, with at statistics of 3.801> 1.96 and a P Value of 0.000 <0.05 so that it proves that Competitive Advantage is able to mediate the influence of Agility on Competitiveness. So, to increase competitiveness can be done through competitive advantage through agility.

Keywords: Capability; Agility; Competitive Advantage; Competitiveness

Introduction

Vocational High Schools (SMK) have an important role in preparing the younger generation

to face the challenges of globalization. Globalization has significantly changed the economic and industrial landscape. Competition is no longer limited to the local or national level, but transcends national borders. One measure of the success of vocational high schools (SMK) is the competitiveness of student graduates in entering the job market or continuing their education or school to a higher level.Competitiveness refers to the ability to win competition in a dynamic business environment.(Gyemang & Emeagwali, 2020).This puts additional pressure on vocational school graduates to have skills and knowledge that are relevant to the needs of the global labor market. Realizing the formation of such a human being requires a process that must support the growth and development of children in terms of cognitive, affective, psychomotor, and motoric.(Law of the Republic of Indonesia Number 20 of 2003, nd).

Based on records from the Central Statistics Agency (BPS), the number of Working Age Population (PUK) as of February 2024 was 214 million people or an increase of 2.41 million people from February 2023. From there, the number of the workforce was 149.38 million or an increase of 2.76 million and the non-workforce was 64.64 million or a decrease of 350 thousand people.(Revo M, 2024). Acting Head of BPS Amalia Adininggar Widyasanti said that from the workforce, not all were absorbed in the labor market, so there were 7.20 million unemployed people. But compared to last year in February 2024 the number of unemployed decreased by 0.79 million people or decreased by 9.89%.

The Open Unemployment Rate (TPT) is a measure used in the economy to show the proportion of the workforce that is unemployed and actively looking for work. By gender, the male TPT decreased quite significantly from 5.83% in February 2023 to 4.96% in February 2024. This figure is much better than the female TPT which only fell by 0.26 percentage points in the same period. The TPT by age group also shows that the unemployment rate, especially in the productive age group (25-59 years), is decreasing from 3.95% in February 2023 to 3.08% in February 2024 (Revo M, 2024).

The unemployment rate in Indonesia in the last five years has experienced significant fluctuations from 2020 to January 2024. In January 2020, the unemployment rate was at 4.94%, but increased sharply to 7.07% in July 2020, influenced by the impact of the Covid-19 pandemic which caused many businesses to close and workers to be laid off. In January 2021, this figure dropped slightly to 6.26%, and increased slightly to 6.49% in July 2021. The decline in the unemployment rate in Indonesia continued in January 2022 with an unemployment rate of 5.83%, then increased slightly to 5.86% in July 2022. In January 2023, the unemployment rate dropped again to 5.45%, and continued to decline to 5.32% in July 2023. Finally, in January 2024, the unemployment rate reached 4.82%, indicating continued economic recovery and the success of various recovery and job creation programs pursued by the government.

When viewed based on the highest education completed by the workforce, the largest number of unemployed people come from Senior High Schools (SMA) and Vocational High Schools (SMK). It is quite pathetic considering that it is the workforce that has a fairly high education. The TPT of SMK graduates is still the highest compared to graduates of other levels of education, which is 8.62% and in second place is the TPT of SMA graduates of 6.73%. Meanwhile, the lowest TPT is Elementary School Education and below, which is 2.38%(Revo M,

2024).

The Open Unemployment Rate (TPT) in Banten Province in the period 2019 to 2024, there is a significant disparity between regions. Serang Regency recorded the highest unemployment rate, reaching 15% of the total workforce in the region. Following in second place is Cilegon City with a TPT of 14%, indicating that the unemployment problem is also quite serious in this region. Pandeglang Regency and Tangerang Regency have relatively the same unemployment rate, namely 13% of the total workforce. Meanwhile, Serang City and Lebak Regency are at a slightly lower level with a TPT of 12%. On the other hand, Tangerang City recorded 11% and South Tangerang City recorded the lowest unemployment rate in Banten Province at 10% of the total workforce. This data indicates the need for comprehensive efforts to address the disparity in unemployment rates between regions in Banten, especially by increasing the competitiveness and skills of the workforce in areas with high TPT.

The Open Unemployment Rate (TPT) data in Cilegon City in the period 2019 to 2024, we can see quite significant fluctuations from year to year. In 2019, the TPT in Cilegon City was recorded at 9.68%, a figure that is still considered moderate. However, the situation began to worsen in 2020, where the TPT jumped sharply to 12.69%, most likely influenced by the impact of the COVID-19 pandemic that hit the global economy. Fortunately, the figure began to decline in 2021, although it was still quite high at 10.13%. The improvement in the situation continued in 2022 and 2023, with the TPT reaching 8.1% and 7.25% respectively. This downward trend is certainly encouraging and shows consistent efforts to overcome the unemployment problem in Cilegon City. However, the TPT figure above 7% is still quite high, so strategic steps are needed to continue to reduce this figure so that economic growth and community welfare can be maximized.

Vocational High School (SMK) is one form of formal education unit that organizes vocational education at the secondary education level as a continuation of SMP, MTs, or other equivalent forms. Schools at the level of education and type of vocational can be called SMK or Madrasah Aliyah Kejuruan (MAK), or other equivalent forms.(Law of the Republic of Indonesia Number 20 of 2003, nd). Vocational High School is one part of the national education system in Indonesia that plays a role in preparing and developing Human Resources (HR). Vocational High School graduates are expected to be able to compete in the world of work with the competencies they have.(Saviraningsih et al., 2022).

Vocational High Schools (SMK) have diverse expertise competencies and are divided into different main subjects with a curriculum designed in such a way as to adapt to the development of the times with a composition of 40% theory and 60% practice in order to prepare graduates who are ready to work and competent in their fields. Known as an industrial city, SMK graduates in Cilegon City have the advantage of various expertise programs that reflect the needs of dynamic and diverse industries such as expertise programs in Mechanical Engineering, Electrical Engineering, Chemical Engineering, Computer and Network Engineering, Culinary Arts, Fashion Design, Office Management, Merchant Ship Nautical, Merchant Ship Engineering and others. Students are intensively trained in their chosen field of expertise through a

curriculum designed to combine theory and practice, including real work experience through internships and field/industrial work practices. As a result, they not only gain technical skills but also prepare themselves to adapt to the real work environment. With these various expertise options, SMK graduates in Cilegon City are able to meet the needs of local and international workers, thus making a significant contribution to the development of industry and the regional economy.

In this context, SMKN 4 Cilegon is an interesting school to study because it has unique expertise competencies that are relevant to Indonesia's maritime potential as the largest archipelagic country in the world. SMKN 4 Cilegon offers expertise programs in Merchant Ship Nautical (NKN), Merchant Ship Engineering (TKN), Industrial Mechanical Engineering (TMI) and Office Management and Business Services (MPLB) which are in line with the needs of the maritime and logistics industry in Cilegon City. The strategic geographical location of SMKN 4 Cilegon near Merak Bakau Port and Indah Kiat Port are the main ports in Indonesia that have high maritime activity, providing benefits for students to gain practical experience and direct access to the industry. In addition, the large number of shipping companies around this area should be a great potential for graduates to be absorbed by the industry. However, the reality shows that many graduates have not been optimally absorbed.

The last three years, it shows that student absorption in the industrial world is still low, so many students have not found jobs that match their expertise.From the results of the interview with the Head of BKK at SMK Negeri 4 Cilegon City, it was obtained information that the average waiting time for SMK students after graduating to get a job is between six to twelve months, some even take up to two years to get a permanent job. One of the main factors for the large number of SMK graduates who are unemployed is because of the low competitiveness of human resources and the ongoing mismatch between the competencies of SMK graduates and the needs of industry/workplace as well as increasingly tight competition in the local job market.

The results of a tracer study from SMKN 4 Cilegon for three years, from 2021 to 2023, focusing on four categories of alumni status, namely working, entrepreneurship, continuing education, and not yet working. In 2021, there were 41 alumni who were working, which then increased significantly to 55 alumni in 2022, but decreased again to 30 alumni in 2023. The entrepreneurial category showed an increase from 24 alumni in 2021 to 32 alumni in 2022, and slightly decreased to 23 alumni in 2023. For the continuing education category, there was an increase from 10 alumni in 2021 to 19 alumni in 2022, but then decreased to 14 alumni in 2023. Meanwhile, the number of alumni who were not working in 2021 was 25 alumni, then decreased in 2022 to 19 alumni, and decreased again to 16 alumni in 2023. Overall, this graph shows fluctuations in the status of SMKN 4 Cilegon alumni over the past three years, with varying trends in each category. The increase in the number of alumni working and continuing their education in 2022 was followed by a decline in 2023, while the self-employed and unemployed categories showed a more stable trend after the initial increase.

Further research by Paradise & Kuncoro (2021) to find out whether there is a relationship between learning agility and career exploration in millennial employees. In this case, career exploration is competitiveness. Learning agility refers to a person's speed, flexibility, and ability

to learn from experience and apply that learning in new situations. While career exploration is an individual's proactive process in gathering information related to career opportunities and evaluating their interests and abilities. This study concludes that learning agility plays an important role in millennial employees' career exploration. Learning agility can help millennial employees to be more adaptive in facing changes in the dynamic work environment and evolving career demands.

From the previous explanation of the problem background, the competitiveness of graduates of state Vocational High Schools (SMK) in Cilegon City can be formulated as follows:

1. How does Capability directly influence the Competitive Advantage of students at State Vocational High School 4, Cilegon City?

2. How does Capability directly influence the Competitiveness of students at State Vocational High School 4, Cilegon City?

3. How does Agility directly influence the Competitive Advantage of students at State Vocational High School 4, Cilegon City?

4. How does Agility directly influence the Competitiveness of students at State Vocational High School 4, Cilegon City?

5. How does Competitive Advantage directly influence the Competitiveness of students at State Vocational High School 4, Cilegon City?

6. How does Capability have an indirect effect on Competitiveness with the intervening variable Competitive Advantage of students at State Vocational High School 4, Cilegon City?

7. How does Agility have an indirect effect on Competitiveness with the intervening variable of Competitive Advantage of State Vocational High School Students in Cilegon City?

The Influence of Capability on Competitive Advantage

Capabilities have a significant impact on competitive advantage(Cadden et al., 2023). Capabilities, which include the skills, knowledge, and resources possessed by an organization, play a crucial role in determining how well the organization can compete in the market. Capabilities are not just about having adequate resources, but also about how the organization manages and utilizes those resources to create unique added value that is difficult for competitors to imitate.

In line with this research(Malibari & Bajaba, 2022)explains that capabilities have a positive influence on competitive advantage. One of the main aspects of capabilities is the organization's ability to innovate. Innovation allows organizations to develop new products and services that meet evolving customer needs. Organizations with strong innovation capabilities tend to be more able to create competitive advantages because they can offer better and faster solutions than competitors. In addition, innovation capabilities also help organizations adapt to market and technological changes, keeping them relevant and competitive in the long term.

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Capabilities have a significant impact on competitive advantage(Alghamdi & Agag, 2024). strong capabilities enable organizations to develop and utilize their resources optimally, creating unique value that is difficult for competitors to imitate. Sustainable competitive advantage often comes from capabilities that are continuously developed and adapted to dynamic market needs. Therefore, investment in developing internal capabilities, such as innovation, operations, and human resources, is a crucial strategy for organizations that want to maintain their competitive position in the long term.

The Influence of Agility on Competitive Advantage

Agilityhas a significant impact on competitive advantage(Barros et al., 2024), agility, is the ability to adapt and respond quickly to changes and challenges. With high agility, SMK (Vocational High School) students are able to compete and adapt to rapid environmental changes, having agility is very important in the ever-evolving world of education and in the dynamic job market. Agility helps SMK students to develop competitive advantages that will set them apart from their peers. In the context of education, agility includes the ability to learn new things, adapt to the latest technology, and develop skills that are relevant to industry needs.

Mata et al., (2023)One way agility affects the competitive advantage of vocational high school students is through their ability to adapt to changing curricula and new technologies. Agile students can quickly learn and master new software, technical tools, and work methods relevant to their vocational field. For example, in the field of informatics engineering, students who are able to master the latest programming languages or popular software development platforms will have a competitive advantage when entering the workforce. Adapting quickly to these changes allows them to remain relevant and valuable to potential employers.

Overall, agility has a significant impact on the competitive advantage of vocational high school students. With the ability to adapt, develop soft skills, respond to industry changes, and commit to lifelong learning, vocational high school students can increase their competitiveness in the job market. This not only helps them get good jobs but also ensures that they can grow and succeed in their future careers.(Clauss et al., 2021).

The Influence of Capability on Competitiveness

Capabilitiesstudents have a significant impact on their competitiveness in education and career. First, academic capabilities, such as abilities in mathematics, science, and language, are important foundations for academic success. Students who have strong capabilities in these areas tend to achieve better results in academic exams and assessments, opening doors to further opportunities in higher education and careers.(Din et al., 2024).

Rehman et al. (2024)explains that capability can have a positive effect on students' competitiveness, critical and analytical thinking skills are an integral part of students' capabilities that affect their competitiveness. Students who are able to construct arguments, evaluate information critically, and make decisions based on solid evidence tend to be better prepared to face intellectual challenges in the future. This ability also plays a role in preparing students to contribute effectively in various social and professional contexts.

Alshawawreh et al. (2024)explains that social-emotional capabilities such as the ability to communicate, work in teams, and manage emotions have a significant impact on student competitiveness. Students who have the ability to interact well with others, show empathy, and build positive relationships tend to be more successful in collaborative and multicultural work environments.

Buranasiri et al. (2024)explains that digital and technological capabilities are increasingly becoming a determining factor in students' competitiveness in this digital era. The ability to use technology effectively, understand basic programming principles, and adapt quickly to new technological developments allows students to compete in an increasingly digitally connected job market.

The Influence of Agility on Competitiveness

Agilityor agility, has a significant influence on students' competitiveness in various aspects of education and career. First, agility in an academic context allows students to adapt quickly to changes in curriculum and teaching methods.(Kovshov et al., 2024). In the dynamic world of education, the ability to adapt to various learning approaches, such as online or hybrid learning, gives students an edge in keeping up with modern education developments. This agility helps students stay competitive and excel in an ever-evolving learning environment.

Mahrinasari et al. (2024)explains that Agility helps students develop critical thinking and problem-solving skills needed to face complex challenges. Agile students are able to think flexibly, find creative solutions, and adapt to new situations. These abilities are essential in the workplace, which often requires innovative approaches and out-of-the-box solutions. Thus, agility helps students to be better prepared for job demands and increase their competitiveness in the job market.

Cao et al. (2024)explains that agility has a significant effect on student competitiveness because in a social-emotional context, agility allows students to interact effectively with various groups of people and adapt to changing social dynamics. Students who have social agility are able to build strong relationships, work together in diverse teams, and manage conflict well. This ability is especially important in a multicultural and collaborative work environment, where the ability to adapt to various social situations increases individual competitiveness.

Based on this, it can be concluded that agility has a significant effect on competitiveness, developing agility in students is the key to increasing their competitiveness in a rapidly changing and challenging world. Education that focuses on developing agility will help students become adaptive, innovative individuals who are ready to face the future with confidence and competence.

The Influence of Competitive Advantage on Competitiveness

Competitive advantage has a significant impact on student competitiveness(Yao et al., 2024), affecting their ability to succeed in academic and professional settings. First, competitive

advantage in students often arises from superior academic ability. Students who have a deep understanding and good skills in a particular subject area tend to be more successful in academic exams and competitions. This advantage gives them access to better educational opportunities, such as scholarships and admission to top educational institutions, which in turn increases their competitiveness in pursuing their dream careers.

Kazemi & Soltani (2024) explains that competitive advantage has a positive effect on student competitiveness. Competitive advantage can also come from non-academic skills such as interpersonal skills, leadership, and time management. Students who excel at communicating, working in teams, and managing their time efficiently tend to be better able to balance multiple academic and extracurricular responsibilities. These skills not only help them in the school environment, but also make them more attractive to universities and future employers.

Abdelfattah et al. (2024) explains that competitive advantage significantly affects competitiveness. Innovation and creativity are other aspects of competitive advantage that contribute to students' competitiveness. Students who are able to think out-of-the-box and develop creative solutions to complex problems often excel in school projects and extracurricular activities. This ability not only helps them gain recognition and awards, but also equips them with skills that are highly valued in the professional world, especially in fast-growing industries such as technology and the arts.

Framework

Based on the description of the problem, theoretical basis and relevant previous research, the research on Capability with exogenous variables of Capability, Agility with intervening variables of Competitive Advantage towards Competitiveness of Students of State Vocational High School (SMK) 4 Cilegon can be described with an empirical model of the framework of thought as in Figure 1 below.

Based on the empirical model of the framework of thought, the research hypothesis can be explained as follows:

1. It is suspected that there isdirect influence of Capability on Competitive Advantage of students of State Vocational High School 4, Cilegon City.

2. It is suspected that there is a direct influence of Capability on the Competitiveness of students at State Vocational School 4, Cilegon City.

3. It is suspected that there is a direct influence of Agility on the Competitive Advantage of students at State Vocational School 4, Cilegon City.

4. It is suspected that there is a direct influence of Agility on the Competitiveness of students at State Vocational School 4, Cilegon City.

5. It is suspected that there is a direct influence of Competitive Advantage on the Competitiveness of students at State Vocational School 4, Cilegon City.

6. It is suspected that there is an indirect influence of Capability on Competitiveness with the intervening variable of Competitive Advantage of students of State Vocational High

School 4, Cilegon City.

7. It is suspected that there is an indirect influence of Agility on Competitiveness with the intervening variable of Competitive Advantage of State Vocational High School students in Cilegon City.

Figure 1

Empirical Model of Thinking Framework

Information:

⟶ :Direct Effect

⟶ :Indirect Effect
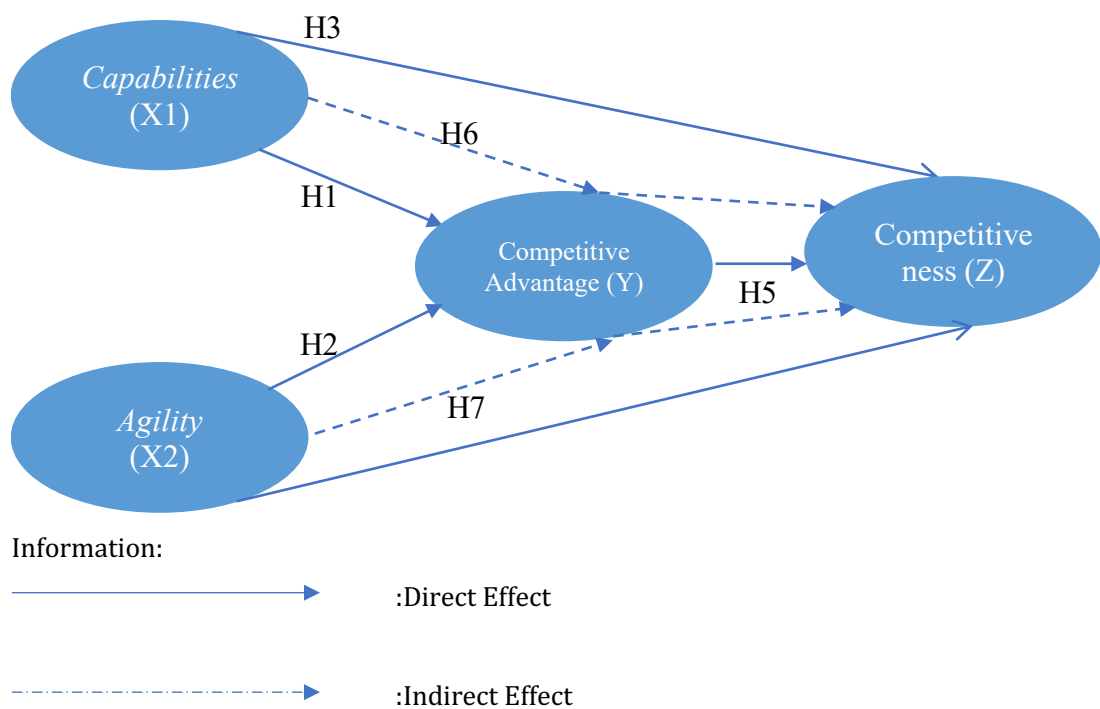
Methods

Research Time

The research lasted for four months, starting from April 1, 2024 to July 31, 2024.

Approach

In line with the research objectives mentioned earlier. This study uses a descriptive causality design with quantitative methodology. This study uses descriptive techniques. Descriptive research often uses data or samples obtained in their natural state without any analysis or conclusions to describe or provide an overview of the subject being studied (Diantoro et al., 2022). Based onThe type of analysis of this research can be called verification research, namely research that attempts to verify the influence between one variable and another variable and to verify the exogenous variable factors that influence endogenous

variables.(Ashley et al., 2024). Variance based structural equation modeling(VB-SEM) is used as a data analysis technique through the SmartPLS program.The first test performed is the model suitability, often referred to as goodness of fit (GoF), which measures the gap between the actual values and the model's predicted values. The purpose of the GoF test is to evaluate how well the observational data fits the research model.The GoF test consists of 3 stages, namely 1) outer model analysis or measurement model; 2) inner model analysis or structural model, and; 3) significance test or hypothesis testing. In accordance with statistical assumptions, PLS is categorized as a non-parametric analysis. PLS does not require a minimum sample because it uses a variance basis with a relatively small sample range of 30-100 samples, but it would be better with more samples.(Wang et al., 2024).

Population and Sample

Population is a generalization area consisting of objects or subjects that have certain quantities and characteristics determined by research to be studied and then conclusions drawn (Sugiono, 2019:126). Population can also be interpreted as the totality of each element to be studied that has the same characteristics, it can be an individual from a group, an event, or something to be studied (Handayani, 2020).

The population of this study was all students of SMK 4 Cilegon, which can be seen in table 1 below:

Table 1
Research Population

No	Class	Amount		Total
		Man	Woman	
1	X	84	61	145
2	XI	51	45	96
3	XII	84	25	109
Total		219	131	350

Source: research data processing results

A sample is a portion of a population and its characteristics. A sample is a portion of a population that is the source of data for a study, where the sample is a portion of the number of characteristics possessed by the population. The sample in this study is a portion of the population mentioned above.(Rautiainen et al., 2024).

The sample size used in this study is adjusted to the analysis method used, namely the Structural Equation Model (SEM). In determining the number of samples using the Hair method (1998) with analysis using SEM, the number of samples needed is at least five to ten times the number of dimensions. The number of indicators in this study is 38, so a minimum of 38 x 5 or 190 samples is needed with a maximum sample of 35 x 10 or 350 samples. While in testing using

this SEM model, the research sample is adjusted to the proposed criteria. With the Maximum Likelihood Estimation (MLE) technique with a good sample size range between 100-200 samples. Thus, the expected number of samples is a minimum of 100 and a maximum of 200 samples. Therefore, in this study a sample size of 190 was used. An example of how to calculate the number of samples taken from each class: Class X total population 145 students, percentage 145/350x100% = 42%. Number of samples 42% x 190 = 79 samples. The same method is used for Class XI and Class XII.

Table 2

Research Sample

No	Class	Amount		Total	Percentage	Sample
		Man	Woman			
1	X	84	61	145	42%	79
2	XI	51	45	96	27%	52
3	XII	84	25	109	31%	59
Total		219	131	350	100%	190

Source: research data processing results

Data collection technique

The data collection technique in this study consists of 2 data sources, namely:

1. Primary Data, is information obtained from the object being studied, or data collected directly from the source (respondent), the results of the data obtained can be in the form of interview results, survey results or questionnaire results. In this case, primary data was obtained from giving questionnaires to the research sample, namely students of SMK 4 Cilegon.

2. Secondary data, data obtained from other sources that already exist, such as from documentation data in the form of literature, including books, journals, proceedings, books, data from government institution documents, etc.(Rautiainen et al., 2024). Data from the document is not used for hypothesis testing but is used more as support and discussion material.

Data Analysis Techniques

The method used by researchers in analyzing data in this thesis uses a data analysis tool, namely PLS (Partial Least Squares). This PLS data analysis tool is used because it has many advantages, so it is not based on assumptions. The data used does not need to be multivariate normal distribution, andThe number of research samples does not have to be large. By using this PLS analysis tool, researchers can determine the value of latent variables, so that the purpose of explaining the existence or absence of a relationship between latent variables is easier. This

study uses the SEM (structural equation modeling) technique, with two exogenous variables, one dependent variableintervening, and 1 endogenous variable(Ramadhanty et al., 2024).

Results
Convergent Validity

For testing*convergent validity*in this study it can be seen from the value*Average Variance Extracted* (AVE) as follows:

Table 3
Average Variance Extracted (AVE)

Latent Variables	*Average Variance Extracted*(AVE)	Note
Agility(X2)	0.621	Valid
Capabilities(X1)	0.553	Valid
Competitiveness (Z)	0.623	Valid
Competitive Advantage (Y)	0.594	Valid

Source: Smart PLS Output Results (2024)

Based on the table above, the values obtained are: *Average Variance Extracted*(AVE) variable *Agility* (X2) is 0.621,*Capabilities*(X1) is 0.553, Competitiveness (Z) is 0.623, and Competitive Advantage (Y) is 0.594, the value is greater than 0.5, so it can be concluded that the AVE value above has met the criteria for good validity so that the evaluation process can be carried out in the next stage.

Internal Consistency Reliability

Fortesting *Internal consistency reliability*can be seen from the value *Cronbach's Alpha, Rho A, Composite Reliability* (CR).

Table 4
Mark *Cronbach's Alpha, Rho A, Composite Reliability (CR)*

Latent Variables	*Cronbach's Alpha*	rho_A	*Composite Reliability*	Note
Agility (X2)	0.932	0.933	0.942	Reliable
Capability (X1)	0.884	0.886	0.908	Reliable
Competitiveness (Z)	0.932	0.934	0.943	Reliable
Competitive Advantage (Y)	0.924	0.925	0.936	Reliable

Source: SmartPLS Output Results (2024)

In the table above, the values obtained are: *Cronbach's Alpha, Rho A, Composite Reliability*(CR) is greater than 0.7 so it can be concluded that the value *Cronbach's Alpha, Rho A, Composite Reliability*(CR) above has met the criteria for good reliability so that the evaluation process can be carried out at the next stage.

Discriminant Validity

Testing *Discriminant Validity of Fornel -Lacker Criterion, cross loadings, Heterotrait Monotrait Ratio (HTMT).*

Table 5

Fornel-Lacker Criterion

Fornell-Larcker Criterion	Agility(X2)	Capabilities(X1)	Competitiveness (Z)	Competitive Advantage (Y)
Agility (X2)	**0.788**			
Capability (X1)	0.748	**0.744**		
Competitiveness (Z)	0.780	0.729	**0.789**	
Competitive Advantage (Y)	0.767	0.738	0.788	**0.771**

Source: SmartPLS Output Results (2024)

Based on the data above, the AVE root correlation value of the latent variable Agility (X2) is greater than other latent variables. For Capability (X1) the AVE root correlation value is greater than other latent variables. Then, the AVE root correlation value of the Competitiveness (Z) variable is greater than other latent variables, and Competitive Advantage (Y) the AVE root correlation value is greater than other latent variables, so it can be concluded that the Agility (X2), Capability (X1), Competitiveness (Z), Competitive Advantage (Y) variables have met the validity standards.

The indicator value of AG1 – AG10 of the latent variable Agility (X2) is greater than the indicator value of other latent variables. For Capability (X1) the indicator value of CA1 – CA8 is greater than other latent variables. Then, the indicator value of DS1 – DS10 of the Competitiveness (Z) variable is greater than other latent variables, and Competitive Advantage (Y) the indicator value of KK1 – KK10 is greater than other latent variables, so it can be concluded that the cross loadings test of the Agility (X2), Capability (X1), Competitiveness (Z), Competitive Advantage (Y) variables has met the validity standards.

Table 6

Mark *Heterotrait Monotrait Ratio (HTMT)*

| Fornell-Larcker Criterion	Agility(X2)	Capabilities(X1)	Competitiveness (Z)	Competitive Advantage (Y)
Agility (X2)	**0.788**			
Capability (X1)	0.748	**0.744**		
Competitiveness (Z)	0.780	0.729	**0.789**	
Competitive Advantage (Y)	0.767	0.738	0.788	**0.771**

Source: SmartPLS Output Results (2024)

Based on the data above, the HTMT Capability (X1), Competitiveness (Z), Competitive Advantage (Y) values are less than 0.9. So it can be concluded that all HTMT values of the variables above have met the criteria for good validity.

Hypothesis Testing
Figure 2
ResultsOutput Run Bootstrapping SmartPLS V.3.2.9
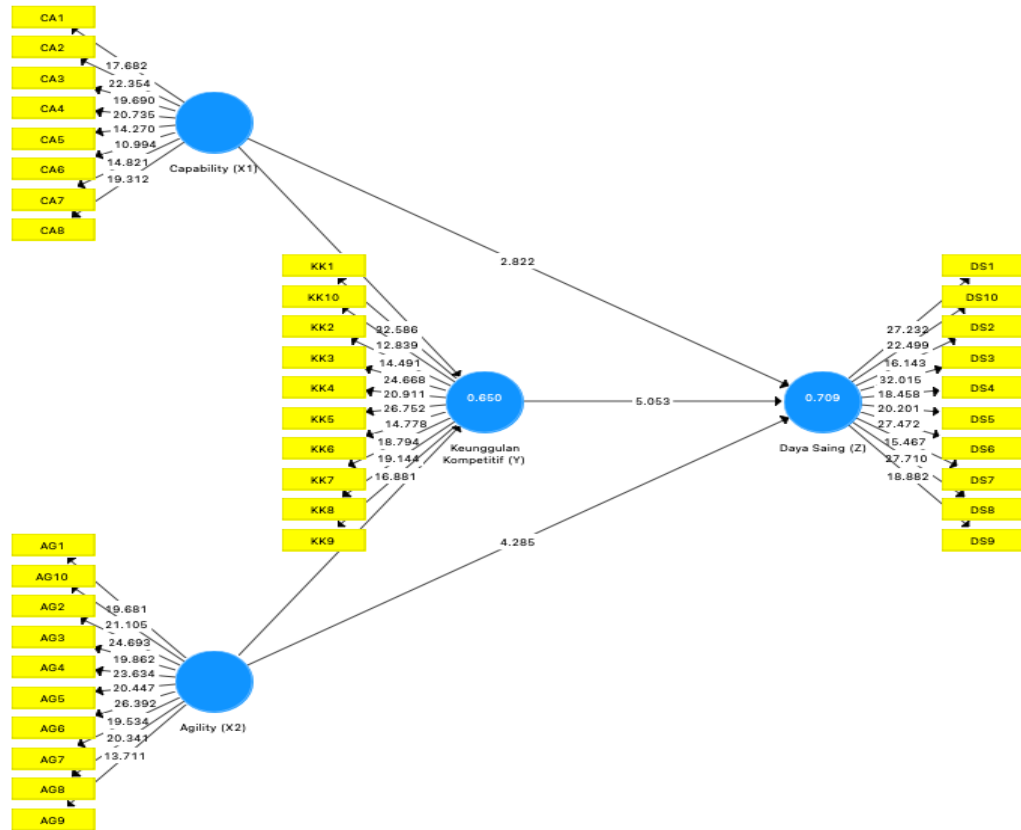
Source: SmartPLS Output Results (2024)

The Inner VIF data above for the variables Agility (X2), Capability (X1), and Competitive Advantage (Y) in the structural model that influences satisfaction is below 5. So it can be concluded that the Inner VIF Values do not experience multicollinearity between variables.

Direct Effect Hypothesis Testing

Based on the table 7 below, the results of the hypothesis testing are as follows:

H1 :The direct influence of Capability on Competitive Advantage of Students of State Vocational High School 4, Cilegon City.

Based on the results of hypothesis testing on SmartPLS data processing which can be seen in the table above, the coefficient value of the Capability path (X1) to Competitive Advantage (Y) is0.371 positive value, with t statistic of 4.221 > 1.96 and P Value of 0.000 < 0.05 which can be interpreted that Capability has a positive and significant effect on Competitive Advantage.

H2: Direct influence of Capability on Competitiveness of Students of State Vocational High School 4, Cilegon City.

Based on the results of hypothesis testing on SmartPLS data processing which can be seen in the table above, the coefficient value of the Capability path (X1) to Competitiveness (Z) is 0.186 positive value, with a t statistic of 2,822> 1.96 and P Value of 0.005 < 0.05 which can be interpreted that Capability has a positive and significant effect on Competitiveness.

H3: Direct influence of Agility on Competitive Advantage of students of State Vocational High School 4, Cilegon City.

Based on the results of hypothesis testing on SmartPLS data processing which can be seen in the table above, the value of the Agility path coefficient (X2) towards Competitive Advantage (Y) is 0.490 positive value, with t statistic of 5.194 > 1.96 and P Value of 0.000 < 0.05 which can be interpreted that Agility has a positive and significant effect on Competitive Advantage.

H4: Direct influence of Agility on the Competitiveness of students of State Vocational High School 4, Cilegon City.

Based on the results of hypothesis testing on SmartPLS data processing which can be seen in the table above, the value of the Agility path coefficient (X2) towards Competitiveness (Z) is 0.343 positive value, with a t statistic of 4,285> 1.96 and P Value of 0.000 < 0.05 which can be interpreted that Agility has a positive and significant effect on Competitiveness.

Table 7

Direct Effect Hypothesis Testing

Mean, STDEV, T-Values, P-Values	Original Sample(O)	Sample Mean(M)	Standard Deviation(STDEV)	T Statistics (|O/STDEV|)	P Values	Hypothesis
Agility (X2) -> Competitiveness (Z)	0.343 Positive Values	0.341	0.080	4,285 >1.96	0,000 <0.05	Accepted
Agility (X2) -> Competitive Advantage (Y)	0.490 Positive Values	0.489	0.094	5,194 >1.96	0,000 <0.05	Accepted
Capability (X1) -> Competitiveness (Z)	0.186 Positive Values	0.186	0.066	2,822 >1.96	0.005 <0.05	Accepted
Capability (X1) -> Competitive Advantage (Y)	0.371 Positive Values	0.369	0.088	4,221 >1.96	0,000 <0.05	Accepted
Competitive Advantage (Y) -> Competitiveness (Z)	0.388 Positive Values	0.393	0.077	5,053 >1.96	0,000 <0.05	Accepted

Source: SmartPLS Output Results (2024)

H5: Direct influence of Competitive Advantage on the Competitiveness of students of State Vocational High School 4, Cilegon City.

Based on the results of hypothesis testing on SmartPLS data processing which can be seen in the table above, the path coefficient value of Competitive Advantage (Y) towards Competitiveness (Z) is0.388 positive value, with a t statistic of5,053> 1.96 and P Value of 0.000 < 0.05 which can be interpreted that Competitive Advantage has a positive and significant effect on Competitiveness.

Indirect Effect Hypothesis Testing

Table 8

Indirect Effect Hypothesis Testing

Confidence Intervals	Original Sample(O)	Sample Mean(M)	2.5%	97.5%
Capabilities(X1) -> Competitive Advantage (Y)	0.371	0.369	0.191	0.540
Competitive Advantage (Y) -> Competitiveness (Z)	0.388	0.393	0.225	0.532

Source: SmartPLS Output Results (2024)

Based on the table above, the results of the hypothesis testing are as follows:

H6: Indirect influence of Capability on Competitiveness with the intervening variable of Competitive Advantage of students of State Vocational High School 4, Cilegon City.

The path coefficient value of Capability (X1) towards Competitiveness (Z) through Competitive Advantage is0.144 positive value, with t statistic of 3.167 > 1.96 and P Value of 0.002 < 0.05 which can be interpreted that Capability has a positive and significant effect on Competitiveness through Competitive Advantage.

H7: Indirect influence of Agility on Competitiveness with the intervening variable of Competitive Advantage of State Vocational High School Students in Cilegon City.

The path coefficient value of Agility (X2) towards Competitiveness (Z) through Competitive Advantage is0.190 positive value, with t statistic of 3.781 > 1.96 and P Value of 0.000 < 0.05 which can be interpreted that Agility has a positive and significant effect on Competitiveness through Competitive Advantage.

Discussion

The Direct Influence of Capability on Students Competitive Advantage

The test results show that the valuebeta coefficient of Capability (X1) on Competitive Advantage (Y) is0.371, with a t statistic of 4.221. From these results, the t-statistic is obtained > 1.96 and the P Value is 0.000 < 0.05, which can be interpreted that Capability has a positive and significant effect on Competitive Advantage. This can be interpreted that Capability does have a significant positive effect on Competitive Advantage.

The findings of this study are in line with previous research conducted by Cadden et al. (2023), in the Journal of Business Research journal found that Capability has a positive influence on competitive advantage, especially in the context of the use of big data and marketing analytics in small and medium enterprises (SMEs). However, the main difference with this study is that the sample used by Cadden et al. focused on companies, while this study took samples from vocational high school students.This study adds to the existing literature by providing empirical

evidence in the context of vocational high school students in Indonesia, which has not been widely explored in previous studies.

Based on these results, researchers can conclude thatThe results of this study underline the importance of capability development as a key factor in strengthening the competitive advantage of students at SMK Negeri 4 Cilegon, which in turn will support them in achieving success in both education and career in the future.

The direct influence of Capability on the Competitiveness of Students of State Vocational High School 4, Cilegon City.

The test results show that the valuebeta coefficient of Capability (X1) on Competitiveness (Z) is 0.186, with t statistic of 2.822. From this result, t-statistic> 1.96 and P Value of 0.005 <0.05 are obtained, which can be interpreted that Capability has a positive and significant effect on Competitiveness. This can be interpreted that Capability does have a positive effect on Competitiveness, supporting this hypothesis.

The findings of this study are in line with previous research conducted by Din et al. (2024) who found thatcapabilityindividuals have a significant impact on their competitiveness in education and career. Although Din et al.'s research focuses on the manufacturing industry, these findings suggest that developing individual capabilities is essential to improving competitiveness, which is also relevant in the context of education at SMK Negeri 4 Cilegon.

This finding also adds to the existing literature and strengthens the importance of developing students' capabilities at SMK Negeri 4 Cilegon as a primary strategy to increase their competitiveness, both in the local context and in competition in the wider job market.

The direct influence of Agility on the Competitive Advantage of Students of State Vocational High School 4, Cilegon City.

The test results show that the valuebeta coefficient of Agility (X2) on Competitive Advantage (Y) is 0.490, with t statistic of 5.194. From this result, t-statistic> 1.96 and P Value of 0.000 <0.05 are obtained, which can be interpreted that Agility has a positive and significant effect on Competitive Advantage. This can be interpreted that Agility does have a positive effect on Competitive Advantage, supporting this hypothesis.

These findings are in line with previous studies that also identified the importance of Agility in creating competitive advantage. For example, Barros et al. (2024) in their study of agile software development projects found that Agility significantly influenced competitive advantage through critical human-related factors. Meanwhile, Mata et al. (2023) showed that one way Agility influences the competitive advantage of vocational high school students is through the ability to adapt to changing curricula and new technologies, which are important factors in the world of education.

Researchers can conclude that with the ability to adapt and respond to change quickly, students of SMK Negeri 4 Cilegon can develop sustainable competitive advantages, better preparing individuals for challenges in the world of work and further education.

The direct influence of Agility on the Competitiveness of Students of State Vocational High School 4, Cilegon City.

The test results show that the valuebeta coefficientAgility(X2) toCompetitiveness(Z) as big as0.343, with a t statistic of 4.285. From these results, the t-statistic is obtained > 1.96 and the P Value is 0.000 < 0.05, which can be interpreted that Agility has a positive and significant effect on Competitiveness. This can be interpreted that Agility does have a positive effect on Competitiveness, supporting this hypothesis.

The findings of this study are in line with previous research conducted by García et al. (2024) who concluded that the ability to learn independently and manage oneself is an important part of capability that has an impact on competitiveness. This study shows that dynamic capability, which includes the Agility aspect, plays a crucial role in competitiveness.

Thus, researchers can conclude that strengthening Agility among students of SMK Negeri 4 Cilegon can be considered as a strategic step in improving student competitiveness. School programs and policies that focus on developing Agility can provide significant benefits in student competition in the industrial world.

The direct influence of competitive advantage on the competitiveness of students of State Vocational High School 4, Cilegon City.

The test results show that the valuebeta coefficientCompetitive Advantage(Y) againstCompetitiveness(Z) as big as0.388, with a t statistic of 5.053. From these results, the t-statistic is obtained > 1.96 and the P Value is 0.000 < 0.05, which can be interpreted that Competitive Advantage has a positive and significant effect on Competitiveness. This can be interpreted that Competitive Advantage does have a positive effect on Competitiveness, supporting this hypothesis.

The findings of this study are in line with previous research conducted by Yao et al. (2024) who found that Competitive Advantage has a significant impact on competitiveness. Although this study focuses on port competitiveness, the findings underline the importance of Competitive Advantage in enhancing competitiveness, which is also relevant to the context of education in vocational schools.

Based on this, the researcher can conclude that the results of this study indicate that there is a strengthening of the Competitive Advantage of SMK Negeri 4 Cilegon students which is a strategic step to increase Competitiveness. Therefore, the implementation of school programs and policies that focus on developing Competitive Advantage can have a positive impact on students' abilities in facing challenges in the world of work.

Indirect influence of Capability on Competitiveness with intervening variable Competitive Advantage of students of State Vocational High School 4, Cilegon City.

The test results show that the valuebeta coefficient of Capability (X1) againstCompetitiveness(Z) through Competitive Advantage (Y) of0.144, with a t statistic of 3.167. From these results, the t-statistic is obtained > 1.96 and the P Value is 0.002 < 0.05, which can be interpreted that Capability has a positive and significant effect on Competitiveness

through Competitive Advantage. This can be interpreted that Capability does have a positive effect on Competitiveness through Competitive Advantage, supporting this hypothesis.

Referring to the results of direct influence, it can be seen that Capability influences Competitiveness both directly and indirectly through the mediator variable, namely Competitive Advantage. This means that although Capability has a direct influence on Competitiveness, the influence is strengthened and mediated through Competitive Advantage.

Indirect influence of Agility on Competitiveness with intervening variable Competitive Advantage of State Vocational High School Students in Cilegon City.

The test results show that the value beta coefficient of Agility (X2) on Competitiveness (Z) through Competitive Advantage (Y) is 0.190, with t statistic of 3.781. From this result, t-statistic> 1.96 and P Value of 0.000 <0.05 are obtained, which can be interpreted that Agility has a positive and significant effect on Competitiveness through Competitive Advantage. This can be interpreted that Agility does have a positive effect on Competitiveness through Competitive Advantage, supporting this hypothesis.

Based on these results, it can be seen that Agility affects Competitiveness both directly and indirectly through the mediator variable, namely Competitive Advantage. This means that although Agility directly contributes to Competitiveness, the influence is strengthened and mediated through Competitive Advantage. This shows that Competitive Advantage plays an important role in linking Agility to Competitiveness (Yao et al., 2024).

Conclusion

Based on the results of the analysis both descriptively using descriptive analysis and inferentially using SEM-PLS on the empirical research model involving 190 students at SMK Negeri 4 Cilegon to determine whether capability, agility and competitive advantage can contribute to increasing competitiveness. Based on the research findings and discussions discussed in the previous chapter, it can be concluded that the results of the first hypothesis test show that the capability variable has an effect on competitive advantage; the results of testing the second hypothesis show that the capability variable has an effect on competitiveness; the results of testing the third hypothesis show that the agility variable has an effect on competitive advantage; the results of testing the fourth hypothesis show that the agility variable has an effect on competitiveness; the results of testing the fifth hypothesis show that the competitive advantage variable has an effect on competitiveness; the results of testing the sixth hypothesis show that the competitive advantage variable can mediate the effect of capability on competitiveness positively and significantly; and the results of testing the seventh hypothesis show that the competitive advantage variable can mediate the effect of agility on competitiveness positively and significantly.

Author Contribution Statement

Windi: Conceptualization and Research Design; Observation; Methodology; Writing - Original Draft; Writing - Review & Editing. **Uli:** Review & Editing; Validation. **Yolla:** Review & Editing: Validation

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