
Exploring the Impact of Industry 4.0 on Logistics Management: Achieving Sustainable Competitiveness in the Contemporary Business Landscape

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Abstract

The purpose of this study is to determine the fundamental factors that contribute to PT. X's competitive advantage. Utilizing Multiple Linear Regression Analysis, the data collected from 135 individuals who participated in the survey at PT. X revealed significant conclusions. According to the findings of the study, the culture of an organization demonstrated a positive and considerable influence on the competitive advantage of the organization. Knowledge sharing, on the other hand, was shown to be an essential contributor, demonstrating a positive and significant influence on competitive advantage at PT. X. Furthermore, this study revealed that organizational innovation is still another crucial component, demonstrating that it has a positive and significant impact on competitive advantage. It is important to note that when taken into account as a whole, the three factors of organizational culture, knowledge sharing, and organizational innovation all showed a positive and significant impact on competitive advantage at PT. X. Moreover, PT. X's competitive advantage can be improved through the synergistic influence of culture, information exchange, and innovation, as highlighted by these studies, which shed light on the subtle interplay of organizational factors.

Keywords: Organizational Culture, Knowledge Sharing, Organizational Innovation, Competitive Advantage.

Abstrak

Tujuan dari penelitian ini adalah untuk mengetahui faktor-faktor fundamental yang berkontribusi terhadap keunggulan kompetitif PT. X. Dengan menggunakan Analisis Regresi Linier Berganda, data yang dikumpulkan dari 135 individu selaku karyawan yang mengikuti survei di PT. X menghasilkan kesimpulan yang signifikan. Berdasarkan temuan penelitian, budaya suatu organisasi menunjukkan pengaruh positif dan besar terhadap keunggulan kompetitif organisasi. Berbagi pengetahuan sebaliknya, terbukti menjadi kontributor penting yang menunjukkan pengaruh positif dan signifikan terhadap Keunggulan Kompetitif di PT. X. Lebih lanjut, penelitian ini mengungkapkan bahwa Inovasi Organisasi masih merupakan komponen penting lainnya, yang menunjukkan bahwa hal tersebut mempunyai dampak positif dan signifikan terhadap Keunggulan Kompetitif. Secara keseluruhan, ketiga variabel yaitu Budaya Organisasi, Berbagi Pengetahuan, dan Inovasi Organisasi semuanya menunjukkan pengaruh positif dan signifikan terhadap Keunggulan Kompetitif di PT. X. Dengan kata lain keunggulan kompetitif PT. X dapat ditingkatkan melalui pengaruh sinergis antara budaya organisasi, berbagi pengetahuan serta inovasi organisasi, seperti yang ditekankan dalam penelitian ini, yang menyoroti interaksi yang terjadi antara faktor-faktor organisasi.

Kata Kunci: Organizational Culture, Knowledge Sharing, Organizational Innovation, Competitive Advantage.

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INTRODUCTION

In the ever-evolving landscape of the business world, companies find themselves on a relentless journey to not only survive but also emerge victorious in the cutthroat competition. The advent of Industry 4.0 has introduced a paradigm shift, prompting enterprises to undergo transformative processes that can revolutionize their operations. The theoretical underpinning of business transformation lies in the endeavor to replace a series of existing and ongoing activities within an organization. This shift in paradigm necessitates a reform of the firm in order to achieve particular objectives (Anatan & Nur, 2022). Industry 4.0 signifies a transformative era where humans, machines, tools, logistics systems, and products are interconnected, facilitating direct communication and collaboration. The integration of products, tools, and people enhance the efficiency of machinery and production tools, reduces costs, and conserves energy (Holubčik et al., 2021). Businesses in the logistics management sector, equipped with intelligent tracking and transparent processes, can adapt swiftly and flexibly to market changes. The massive changes brought about by Industry 4.0 in the logistics sector necessitate companies to undergo a holistic business transformation to attain their business objectives. This transformation encompasses changes in systems across all business lines, and organizations must optimize their competitive advantage to face these transformations head-on. The logistics industry benefits from increased efficiency, decreased prices, and saved resources as a result of the integration of products, technologies, and people that come with Industry 4.0. In light of this, businesses, including PT. X, are required to go through significant business transformations in order to successfully navigate these challenges and accomplish their corporate goals.

When PT. X was first created in 2009 as a car rental agency, the company became aware of the expansion opportunities that existed within the logistics industry. As a consequence of this, the company shifted its focus to logistics transportation management in 2016, with a particular emphasis on providing services related to the management of sustainable goods movement. This transition allowed them to provide sustainable cargo movement management services, thereby creating, developing, and enhancing value for their customers. Thus PT. X committed to delivering the best supply chain solutions aimed at improving the quality of the Indonesian supply chain. Their core values of speed, perfection, integrity, creativity, innovation, and efficiency serve as guiding principles to operate. As a result of this strategy move, PT. X was positioned to become an integral part of Indonesia's supply chain services, highlighting the company's dedication to provide supply chain solutions of the highest possible quality.

Initial data gathering was carried out in order to gain an understanding of the issues that PT. X is now facing. The results of this collection revealed shortcomings in areas such as competitive advantage, organizational culture, information sharing, and organizational innovation. It has been established through the research conducted by (Azeem et al., 2021) that there is a connection between

organizational culture, knowledge sharing, organizational innovation, and competitive advantage. There is a lack of innovation, risk-taking, and results orientation in the culture of the organization, which is one of the specific challenges that have been recognized in position of PT. X. When it comes to the dissemination of information, the organization experiences a lack of leadership in terms of inspiring subordinates and finding creative solutions to challenges. In addition, PT. X is confronted with difficulties in terms of organizational innovation, notably in terms of modernizing the information systems for human resources and management.

The research highlights the importance for organizations, such as PT. X, to quickly adapt to Industry 4.0. Moreover, this also highlights the fact that intense competition and the rapid changes brought about by Industry 4.0 necessitate a full corporate transformation in order to optimize competitive advantage. Adaptability and reactivity to changes in the market are being improved through the incorporation of intelligent tracking and transparent operations, which are causing the dynamics of the logistics industry to undergo a progressive transformation.

The peculiarity of the study resides in the fact that it was conducted within the specific setting of PT. X, which shifted from being a car rental business to also being a logistics transportation management company. A significant viewpoint on how businesses might prosper in the era of Industry 4.0 is provided by this change. The addition of a pre-survey that focuses on characteristics such as competitive advantage, organizational culture, knowledge sharing, and organizational innovation contributes to the enhancement of the study's practical application within the framework of PT. X. In addition, the findings of Azeem's research, which link theoretical principles with the particular situation of PT. X, contribute to the enrichment of the existing body of literature.

The research gap that has been highlighted is related to the lack of appropriate exploration within the existing body of literature regarding the ways in which businesses, particularly those operating in the logistics industry, can successfully navigate and optimize their competitive advantage in the midst of the revolutionary landscape of Industry 4.0. The study does not explicitly delve into the specific strategies, experiences, or outcomes of companies, which leaves a gap in the understanding of practical approaches and their effectiveness in the context of Industry 4.0. Despite the fact that the study provides an overview of the challenges and changes introduced by Industry 4.0, it does not explicitly delve into these specific aspects.

THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

As a purposeful plan focused at increasing the value of a company, competitive advantage is an essential component for achieving success in strategic management. According to Azeem et al (2021), it is of the utmost importance to provide assistance to management in order to encourage the development of work through the implementation of organizational culture, knowledge sharing, and

organizational innovation. The term "competitive advantage" is defined by Perkasa (2018; 47) as a rewarding strategy that companies implement in order to boost their efficiency in the market through collaborative efforts. To attain a continuous competitive advantage, the strategy should be developed in such a way that it enables the business to not only dominate existing markets but also into new ones. The value or benefits that a company creates for its consumers are the primary source of competitive advantage for a company.

Tuala (2020: 4) defines organizational culture as a pattern of core assumptions about beliefs, values, and behavior that is created and developed by an organization as a basis for an organization to establish goals, consensus, excellence, achievement, innovation, unity, closeness, and organizational integrity in order to achieve success. Furthermore, organizational culture serves as a foundation for an organization to achieve success. When it comes to the settlement of organizational problems, norms or directives that have been established for members of an organization to behave in an equal manner both within and outside of the organization in order to support the growth and development of the organization are referred to as organizational norms.

According to the findings of research by Azeem et al (2021); Azhad et al (2019), which demonstrates that the culture of an organization has an effect on the competitive advantage achieved by the organization, the culture of an organization has an effect on the competitive advantage obtained by the organization. This is because the organizational culture of the company will be the key factor by which the level of competitive advantage that the company possesses will be determined. Thus, the first hypothesis that can be formulated is:

H1: organizational culture influences competitive advantage.

According to Kartiraharjo & Isfianadewi (2021), individuals within an organization can be organized and motivated to willingly communicate information, knowledge, skills, and experience in order to accomplish the goal of improving the performance of the organization. It is possible for knowledge sharing to take the form of a process, procedure, or even a system. Both Kartiraharjo & Isfianadewi (2021) and Azeem et al (2021) conducted research that proved that the act of sharing knowledge has an impact on a company's ability to gain a competitive advantage. This research is based on the findings of the research that was conducted previously. This is owing to the fact that the organization will see the biggest possible competitive advantage as a result of the enhancement of information exchange inside the firm. Based on the previous studies, the second hypothesis can be formulated as follows:

H2: Sharing information influences competitive advantage.

In addition, according to Azeem et al (2021), organizational innovation is a measurement of creative capacity that contributes to the development of an organization and is the component that is necessary to the attainment of market success. An organization's ability to innovate is a key factor in determining its level of success in the market. Creating and implementing novel organizational practices and strategies with the intention of bringing about transformation within an organization or in its relationships with external parties is what is meant by the phrase "organizational innovation." This is done with the intention of bringing about change. Additionally, via the promotion of knowledge, satisfaction, and flexibility in the workplace, as well as the facilitation of organizational transformation in terms of progress, organizational innovation contributes to an improvement in the performance of the corporation. Creating new knowledge is the means by which these goals can be achieved. Organizational innovation encourages creative practices that increase a company's efficiency and competitiveness.

This innovation has an effect on the management teams of an organization, which in turn influences the management teams. Organizational innovation has the capacity to generate value, which is the reason why this is the case. Azeem et al (2021) as well as Bahren et al (2018) conducted research that led to the conclusion that the presence of organizational innovation has an effect on the competitive advantage of an organization. This conclusion was reached based on the findings of both of these studies. This is because the level of organizational innovation that is present in the firm will determine the extent to which the company will develop the greatest possible amount of competitive advantage. A third hypothesis can be developed by taking into consideration the information that was presented earlier in connection to the research that came before it.

H3: organizational innovation influences competitive advantage

Referring to a variety of explanations concerning the theory that was utilized, previous research, as well as the formation of hypotheses that answer partially, the fourth hypothesis that can be proposed is how the variables that were studied, specifically organizational culture, information sharing, and organizational innovation variables, collectively influence competitive advantage. Therefore, the fourth hypothesis can be proposed as follows:

H4: organizational culture, knowledge sharing and organizational innovation simultaneously influence competitive advantage.

The research model on this study thus can be depicted as follows:

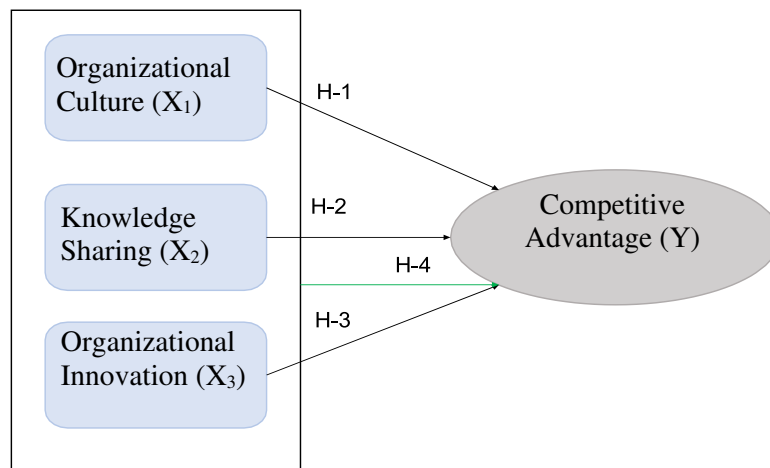


Figure 1. Research Model

RESEARCH METHOD

This study makes use of a quantitative technique, and the researchers explore causal relationships using the unit of analysis, which is precisely referred to as PT. X. The temporal framework that was utilized in this research was that of a cross-sectional study. The purpose of this study was to investigate a specific time period for a preset population and sample, making use of a number of different independent variables.

What is meant by the term "sampling approach" is the procedure that is utilized for the purpose of selecting a subset of individuals or products from a wider population for the goal of conducting research. The sampling technique known as saturated sampling is utilized, in which all of the individuals who are a part of the community that is being investigated are included as samples (Hardani et al., 2020:369). This ensures that the whole population that is being investigated is included.

While the method of data collection comprised of a questionnaire-based survey that was carried out through the use of Google Forms, the survey was administered. In the course of this inquiry, a measurement scale that ranged from one to five was utilized. To put it another way, the scale is constructed in such a way that a value of 1 corresponds to statements that strongly disagree, a value of 2 corresponds to statements that do not agree, a value of 3 corresponds to statements that are neutral, a value of 4 corresponds to statements that agree, and a value of 5 corresponds to statements that strongly agree.

RESULT, DISCUSSION, AND MANAGERIAL IMPLICATION

Characteristics of the Respondents

There are 77 male respondents, which roughly accounts for 53.03% of the total, while there are 58

female respondents, which accounts for approximately 42.96% of the total as well. The data collected on the age distribution of respondents reveals that 76 respondents, which accounts for 56.30 percent of the total, belong to the age group of 20-30 years, 45 respondents, which accounts for 33.33 percent, belong to the age group of 31-40 years, 12 respondents, which accounts for 8.89 percent, belong to the age group of 41-50 years, and two respondents, which accounts for 1.48 percent, are older than 51 years. In the meantime, the data concerning the educational background of the respondents reveals that 35 respondents, which accounts for 25.92% of the total, have a level of education equivalent to a D3: 55 respondents, which accounts for 40.74 percent, have an undergraduate level of education, and 45 respondents, which accounts for 33.33 percent, have a post-graduate level of education.

Test of Validity and Reliability

Based on the findings of the validity test, it was determined that the overall question indicators of Organizational Culture (X1), Knowledge Sharing (X2), and Organizational Innovation (X3) in connection to Competitive Advantage (Y) have r counts that are higher than the r tables. All of the indicator items have been determined to be legitimate, and as a result, they are eligible to move on to the reliability test. Every single one of the Cronbach's alpha values is higher than 0.700. As a result, it is possible to draw the conclusion that the data that was investigated in the study demonstrates dependability and consistency, which makes it appropriate for use as a research instrument.

Test of Classical Assumption

According to the results of the test based on the classical assumption, the asymptotic significance value (Asymp. Sig.) of 0.070 for the two-tailed asymptotic hypothesis is greater than the critically important value of 0.05. Thus, the data that is being investigated follows a normal distribution. Heteroscedasticity is not present in a perfect regression model, which is one of its defining characteristics. The scatterplot analysis demonstrates that there is no visible pattern, with data points exhibiting dispersion both above and below the zero mark on the Y-axis. This indicates that there is no pattern. Therefore, the existence of heteroscedasticity is proved to be a false hypothesis. Additionally, the results of the multicollinearity analysis suggest that the independent variables have a tolerance value that is greater than 0.10 and a VIF value that is lower than 10. This indicates that there is no multicollinearity among the variables.

Test of Multiple Regression Analysis

When conducting a regression analysis, the primary goal is to determine the magnitude of the influence that the independent variable (X) has on the variable that is being analyzed (Y). The current investigation makes use of a statistical method known as multiple linear regression analysis, which is

Table 1. Multiple Linear Regression Coefficients^a

	Model	Unstandardized Coefficients		Stdzd Coef		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2,764	2,271		1,217	,226
	OC	,163	,082	,147	1,984	,049
	KS	,410	,060	,489	6,781	,000
	OI	,242	,107	,169	2,267	,025

a. Dependent Variable: Competitive Advantage

Source: Output SPSS 23

made possible by the application of the SPSS 23 software program. The following is a presentation of the results that were obtained from the computations regarding multiple linear regression in table 1.

On the basis of the tabulated beta values of the unstandardized coefficients, the formulation of the equation for multiple linear regression can be determined as follows:

One possible representation of the equation is as follows: $Y = 2.764 + 0.163X_1 + 0.410X_2 + 0.242X_3 + e$, where Y is the dependent variable, X1, X2, and X3 are the independent variables, and e is the error term.

Consequently, the following meaning is possessed by the equation:

The constant number of 2.764 shows that the value for Competitive Advantage will be 2.764 score units when all of the variables of Organizational Culture, Knowledge Sharing, and Organizational Innovation are set to zero. This is because the constant number is 2.764. Arguments can be made that there are drawbacks to the situation.

A positive change of one unit in the Organizational Culture score is connected with a comparable rise of 0.163 units in Competitive Advantage, according to the regression coefficient for the variable "Organizational Culture" (X1), which demonstrates that both of these variables are related to one another.

The regression coefficient for the Knowledge Sharing variable (X2) suggests that there is a commensurate gain of 0.410 in Competitive Advantage for every unit increase in Knowledge Sharing score. This is indicated by the fact that the coefficient is positive.

A positive change of one unit in the Organizational Innovation score is related with an increase of 0.242 units in Competitive Advantage, according to the regression coefficient for the variable "Organizational Innovation" (X3). This suggests that a positive change in the score leads to an

increase in Competitive Advantage.

The results of the statistical t test indicate that the Organizational Culture variable has a t value of 1.984, which is related with a significant value of 0.049. This may be demonstrated by demonstrating that the t value exists. A result of 0.049 is lower than the threshold of 0.05. As a consequence, the theory is considered to be correct. This research illustrates that there is a substantial and positive association between the culture of an organization and the competitive advantage that it enjoys.

According to the findings of the statistical t test, it is possible to see that the Knowledge Sharing variable has a t value of 6.781, which is followed by a significant value of 0.000. This is something that can be recognized easily. The significance threshold of 0.05 is lower than the value of 0.000, which falls below it. As a consequence, the theory is considered to be correct. A favorable and significant impact on the achievement of a competitive advantage is demonstrated by this finding, which illustrates that the act of sharing knowledge has a positive impact.

Based on the findings of the statistical t test, it is clearly to see that the Organizational Innovation variable has a t value of 2.267, which is followed by a significant value of 0.025, suggesting that the variable is statistically significant at the 0.05 level. As a consequence, the theory is considered to be correct. In light of this discovery, it is clear that the presence of organizational innovation has a significant and positive influence on the achievement of competitive advantage.

For the purpose of determining the extent to which independent factors contribute to the explanation of the dependent variable, the statistical test known as the F-test is utilized. The alternative hypothesis is accepted in place of the null hypothesis when the p-value of the F-test is less than 0.05. This indicates that the null hypothesis is not supported. The conclusion that can be drawn from this finding is that the independent variables as a whole have an effect that is statistically significant on the variable that is being studied. It is appropriate to reject the null hypothesis if the p-value that was obtained is greater than 0.05. According to this finding, the cumulative effect of all of the independent factors does not have an effect that is statistically significant on the variable that is being studied, the competitive advantage.

The results of the Anova test, which is also referred to as the F test, are presented in table 2 that has been provided. These results may be viewed from the data that was presented before in order to obtain significant value. Taking into consideration the fact that the value of 0.000 is less than 0.05, the hypothesis can be accepted. It can be deduced from this that there is a connection between organizational culture, knowledge sharing, organizational innovation, and competitive advantage while all of these factors are simultaneously present.

A statistical metric that measures the amount of the variation in the dependent variable that can be predicted from the independent variable is called the coefficient of determination, which is also commonly referred to as R-squared. It is the purpose of the determination test, which is also referred

to as the accuracy test of model estimates or the goodness of fit test, to determine the degree to which a model is able to provide an explanation for the variable that is being studied. The results of the test designed to determine the coefficient of determination are presented in the table below, which are as follows.

The coefficient of determination is calculated to be 0.319, which may alternatively be represented as 31.9%, as shown in table 3 that has been provided. As a result of this investigation, it can be deduced that there exists a substantial correlation between the variables of Organizational Culture, Knowledge Sharing, and Organizational Innovation, as well as the variable of Competitive Advantage, which accounts for 31.9% of the variation. Contrarily, the research did not offer an explanation for the remaining 68.1% of the influence that was found, which shows that there are additional components that are at play.

The Influence of Organizational Culture on the Advantage Advantage in Competition

Using the statistical analysis, it is possible to demonstrate that the organizational culture variable, which is denoted by the letter t, demonstrates a tcount of 1.984, which results in a value of 0.049 that is considered to be significant. The traditional threshold for significance is set at 0.05, but this significant value of 0.049 is determined to be lower than that. The validity of the hypothesis has been established. This research illustrates that there is a substantial and positive association between the culture of an organization and the competitive advantage that it enjoys.

The Influence of Knowledge Sharing on the Advantage Obtained from Competition

Using the results of the t statistical test, it has been determined that the Knowledge Sharing variable possesses a tcount value of 6.781, which is accompanied by a significant value of 0.000. This is the case because the tcount value is a statistically significant value. The numerical value of 0.000 is lower than the requirement of 0.05, which is the threshold. Acceptance of the hypothesis has been reached. A favorable and significant impact on the achievement of a competitive advantage is demonstrated by this finding, which illustrates that the act of sharing knowledge has a positive impact.

The Influence of Organizational Innovation on the Advantage of Companies in the Market

It has been noticed, on the basis of the results of the t-statistical test, that the Organizational Innovation variable demonstrates a tcount value of 2.267. This value is accompanied by a significant value of 0.25, which indicates that the variable is statistically significant at a level of significance that is lower than 0.05. Acceptance of the hypothesis has been reached. Based on the information that has been presented, it can be concluded that there is a robust and statistically significant connection between organizational innovation and competitive advantage. It is important to note that the findings

of the research have substantial consequences for both more research and intellectual discourse. The following part will provide an explanation of the theoretical implications that have been reached.

The empirical data indicate that there is a relationship that is both statistically significant and positive between the independent variable of Organizational Culture (X1) and the dependent variable of Competitive Advantage (Y). According to the findings of prior research carried out by Azeem et al (2021); Azhad et al (2019); Qomariyah & Az-zahra (2020), which declare that Organizational Culture has a major impact on Competitive Advantage, this finding is in agreement with those findings. The establishment of a robust organizational culture within a firm has the potential to result in the acquisition of a major advantage over other businesses in the industry. Organizational culture is defined by Nurhalim (2022); Tuala (2020:4) as a collection of fundamental assumptions concerning beliefs, values, and behaviors that are established and cultivated by organizations in order to establish objectives, foster agreement, promote excellence, drive innovation, foster unity, cultivate familiarity, and uphold organizational integrity, which ultimately results in successful outcomes. Establishing consistent standards or guidelines for members of an organization to exhibit uniform behavior both within and outside of the organization is essential for efficiently addressing organizational difficulties and facilitating the progression and progress of the organization. This is because uniform behavior is a sign of loyalty and commitment to the company.

Table 2. Simultaneous result of F-test ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	315,166	3	105,055		
	Residual	628,583	131	4,798	21,894	,000b
	Total	943,748	134			

- a. Dependent Variable: CA
b. Predictors: (Constant), OI, KS, OC

Table 3. Coefficient Determination Model Summary^b

Model	R	R Square	Adjusted Square	R Std Error of the Estimate
1	,578a	,334	,319	2,191

- a. Predictors: (Constant), OI, KS, OC
b. Dependent Variable: CA

Source: Output SPSS 23

The outcomes of the empirical research indicate that there is a correlation that is both positive and statistically significant between the variable of Knowledge Sharing (X2) and the variable of Competitive Advantage (Y). This discovery is in agreement with the findings of research carried out by Azeem et al (2021); Kartiraharjo & Isfianadewi (2021), which indicate that the dissemination of knowledge has a substantial influence on the competitive advantage of an organization. The possibility of achieving a greater advantage over one's competitors is the driving force behind the decision to encourage increased exchange of information within the firm. According to Kartiraharjo & Isfianadewi (2021), the concept of knowledge sharing comprises a methodical and procedural approach, or even a structured system, that can allow the voluntary transmission of information, knowledge, skills, and experiences among persons working inside an organization. Enhancing the overall performance of the organization is the fundamental goal of this procedure, which aims to achieve this purpose.

It has been proven through empirical research that the relationship between the variable of Organizational Innovation (X3) and the variable of Competitive Advantage (Y) exhibits a positive and statistically significant influence on each other. According to the findings of prior research carried out by Azeem et al (2021); Bahren et al (2018), which postulate that there is a connection between organizational innovation and competitive advantage, this finding is in agreement with those findings. Because of the positive association that exists between the level of organizational innovation that exists inside a firm and the degree to which it is able to attain competitive advantage, this is the case. According to Azeem et al (2021), Organizational Innovation is a metric that can be used to evaluate the creative potential of an organization, which in turn helps to develop organizational growth and plays a crucial part in achieving market success because of its importance. The adoption and implementation of novel methods and practices within an organization is what is meant by the term "organizational innovation." The motivation behind this is to bring about transformative changes in both the internal operations of the organization and the interactions with the outside world.

Furthermore, it has been demonstrated that the application of organizational innovation brings about an improvement in corporate performance by means of the development of knowledge, the promotion of employee satisfaction and adaptability within the workplace, and the facilitation of organizational transformation and advancement. Management teams are significantly impacted by organizational innovation because of the inherent value-creating potential it possesses. This is because organizational innovation makes it easier for management teams to embrace creative techniques that improve a company's efficiency and competitive edge.

In the context of the practical implications, the assessment of the thesis, which is developed through research using descriptive analysis methodologies that are linked to each variable that is being investigated, is included. In the following discussion, the pragmatic repercussions are broken

down and explained in further detail.

In order to improve the competitive advantage of an organization, it is essential to strengthen the organizational culture in terms of creativity, risk-taking, attentiveness, result-orientedness, people-orientedness, team-orientedness, aggression, and stability. It is the variable that represents organizational culture that has the lowest average value, which indicates a level of stability (x1.7), and it has a numerical value of 1.82. This study in line with the previous one from Nurhalim (2022) and Bich et al (2021).

It is necessary to increase knowledge sharing in order to increase competitive advantage. This is required because it is related to the ability of a leader to motivate his subordinates to share knowledge, the ability to solve problems with creative solutions, the ability to absorb information and knowledge, and the ability to convey knowledge obtained from both internal and external companies. The knowledge sharing variable, which is an indicator of the ability to transfer knowledge gathered from both internal and external firms (x2.4), has the lowest average value, with a value of 2.96. This value is the lowest of all the factors that are considered. This study supports the previous research from Garcia-Perez et al (2018); Roswiyanti et al (2022).

In order to boost the competitive advantage, it is required to increase organizational innovation in relation to updating the organizational structure, updating the coordination system, updating the human resources system, and updating the management information system. The Organizational Innovation variable, which is an indicator of upgrading management information systems (x3.4), has the lowest average value, with a value of 2.16. This value is the lowest of all the average values reported. This study support the previous research from (Alharbi et al., 2019; Banmairuroy et al., 2022; Demircioglu, 2017; Tanesab & Park, 2020).

CONCLUSION, SUGGESTION, AND LIMITATIONS

From the results of the research that has been tested and the discussions that have been discussed, conclusions can be drawn from this research are:

1. Organizational culture has a positive and significant effect on competitive advantage at organization.
2. Knowledge sharing has a positive and significant effect on competitive advantage at organization.
3. Organizational innovation has a positive and significant effect on competitive advantage at organization.
4. Organizational culture, knowledge sharing, organizational innovation together have a positive and significant effect on competitive advantage at organization.

Recommendations for organizations

1. PT. X needs to improve its organizational culture by keeping the situation of the organization stabil.
2. PT. X. was established with the purpose of facilitating the distribution of information, thus it is better for the company to convey knowledge acquired from both internal and external sources.
3. In order to enhance organizational innovation, PT. X needs to keep updating its management information system.

Potential avenues for future investigation include:

1. Subsequent investigations may incorporate exogenous variables, such as leadership style variables, communication, work environment, and other unexplored factors that have not been encompassed or examined within the present study.
2. Additional investigations can employ alternative industries as subjects of study.
3. Conducting additional research has the potential to augment the quantity of indicators and respondents, so enhancing the comprehensiveness of the data and expanding the research's reach.

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