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ANALYSIS OF SUPPORTING FACTORS OF ENTREPRENEURIAL INTENTION MEDIATED BY THE COURAGE TO TAKE RISK IN GEN Z STUDENTS IN TANGERANG

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ABSTRACT

Gen Z students have a deep understanding of market trends and also supporting factors that can be important capital in entrepreneurship. However, the many business ideas among students have not completely reduced the unemployment rate of graduates. This is a central issue in the development of the Indonesian economy because there is still fear in taking risks in entrepreneurship. This study aims to analyze the factors that influence the entrepreneurship intention of students in Tangerang, focusing on the influence of self-efficacy, family support, and institutional support, as well as the mediating role of the ability to take risks. The study used the Non-probability Sampling technique with the Purposive Sampling method, which involved respondents according to certain criteria. The results showed that family support and institutional support had a positive and significant influence on entrepreneurship intention. However, the ability to take risks did not have a significant influence on entrepreneurship intention. Mediation analysis showed that the ability to take risks significantly mediated the relationship between institutional support and self-efficacy with entrepreneurship intention, but not on family support. This study concludes that self-efficacy and support from family and institutions are important factors in increasing entrepreneurship intention, while the ability to take risks has a mediating role that varies depending on the type of support received by students.

Keywords: Entrepreneurship Intention; Self-Efficacy; Family Support; Ability to Take Risks; Gen Z

INTRODUCTION

Generation Z students have a high interest in flexible and profitable businesses, supported by their understanding of digital trends (Sutrisno et al., 2023; Prastyaningtyas & Arifin, 2019). Various business fields such as tutoring, food businesses, design services, and thrift shops are popular choices because they are in line with the skills possessed by students (Nuraeningsih et al., 2021). In addition to being a source of additional income, this business also provides practical experience that supports their future (Martins et al., 2023). Despite many business opportunities, the unemployment rate for college graduates is still high due to the imbalance between the number of workers and available jobs (Suban & Gani, 2024). *Badan Pusat Statistik* (2024) shows that the unemployment rate for diploma and bachelor's degree graduates has fluctuated in the last three years, with job competition as the main cause. Tangerang City, as one of the centers of economic growth, has various sectors that support the economy, such as transportation, processing industry, and trade (*Badan Pusat Statistik Kota Tanggerang*, 2024). The local government has initiated various programs to increase entrepreneurship, but the ratio of entrepreneurs in Indonesia is still low, at 3.47% of the total population (Dihni, 2023).

Lack of self-confidence and fear of risk are the main obstacles for students to become entrepreneurs (Anjum et al., 2021). Support from universities instilling an entrepreneurial spirit is important to build students' mindsets to be more willing to take risks and create job opportunities (Mei et al., 2020). In addition, family support also plays a major role in shaping entrepreneurial intentions through motivation, capital, and business facilities (Lingappa et al., 2020). However, excessive family involvement can cause conflicts that affect productivity (Obrenovic et al., 2020).

This study aims to analyze the factors that influence the entrepreneurship intention of Gen Z students in Tangerang, with the courage to take risks as a mediating variable. The focus of the study includes the influence of self-efficacy, family support, and educational institution support on entrepreneurship intention (Martins et al., 2023). By understanding these factors, this study can provide insight into strategies for increasing entrepreneurship among students to overcome unemployment and encourage economic growth (Ragmoun, 2023).

LITERATURE REVIEW

Research Variables

Self-efficacy, namely an individual's belief in their ability to face business challenges, plays an important role in increasing entrepreneurial intentions. Individuals with high self-efficacy are more optimistic, adaptive, and dare to take real steps in starting a business (Khasanah & Setiyono, 2024). Family support is a form of moral, financial, or access to business opportunities, influencing a person's intention to become an entrepreneur. This support increases self-confidence and motivation, while lack of support can be a major obstacle (Obrenovic et al., 2020). Educational institution support is a support that can increase entrepreneurial intentions through entrepreneurship programs, training, seminars, and access to mentors and business networks. Entrepreneurship education helps students develop managerial and innovative skills that are important in the business world (Wu et al., 2022; Mei et al., 2020; Bataragoa et al., 2020).

Risk-taking ability is an ability that plays an important role in entrepreneurial intentions because almost every business decision involves uncertainty. Individuals who dare to take risks are more proactive, optimistic, and able to recover from failure to develop better business strategies (Nuryadi & Rahmah, 2024). Entrepreneurial intention is a person's intention to become an entrepreneur influenced by various factors, such as self-efficacy, family support, the role of educational institutions, and courage in taking risks. The stronger these factors are, the higher the likelihood of a person starting and running their business (Chien-Chi et al., 2020).

Relationship between Self-Efficacy and Entrepreneurial Intention

Self-efficacy plays an important role in increasing entrepreneurial intention because individuals who believe in their abilities tend to be more courageous in facing challenges and taking real steps in starting a business (Chien-Chi et al., 2020). Individuals with high self-efficacy are more optimistic in managing a business, overcoming problems, and adapting to change (Khasanah & Setiyono, 2024). Conversely, those who doubt their abilities tend to avoid risks and feel hesitant to start a business (Pertiwi & Khafid, 2021). Therefore, the higher a person's self-efficacy, the greater their entrepreneurial intention.

Relationship between Family Support and Entrepreneurial Intention

Family support plays a crucial role in fostering entrepreneurial intention by providing moral encouragement, financial assistance, and access to business opportunities (Yopie & Chrislin, 2022). Individuals who receive family support tend to be more confident and motivated to face challenges in entrepreneurship (Bataragoa et al., 2020). On the other hand, lack of family support can be a major obstacle for someone in starting a business (Obrenovic et al., 2020).

The Relationship between Educational Institution Support and Entrepreneural Intention

Educational institutions play a role in increasing entrepreneurial intention by providing entrepreneurship programs, training, seminars, and access to mentors and business networks (Wu et al., 2022). Students who receive entrepreneurship education are more confident in facing business challenges and have more mature business planning (Mei et al., 2020). This support also allows students to develop managerial and innovative skills that are crucial in the business world (Bataragoa et al., 2020).

The Relationship between Risk-Taking Ability and Entrepreneurial Intention

The ability to take risks plays an important role in fostering entrepreneurial intention because almost every business decision involves uncertainty (Sutrisno et al., 2023). Individuals who dare to take risks tend to be more proactive, optimistic, and see opportunities amidst challenges (Nuryadi & Rahmah, 2024). Those with a high tolerance for risk are also better able to recover from failure and develop better business strategies (Suebuddin, 2021).

The Relationship between Self-Efficacy and Entrepreneurial Intention through the Mediating Role of Risk-Taking Ability

Self-efficacy not only has a direct effect on entrepreneurial intention but is also strengthened by the ability to take risks. Individuals with high self-efficacy are more courageous in facing uncertainty and see risks as opportunities for growth, not obstacles. This ability increases an individual's confidence in managing a business and reduces the fear of failure.

The Relationship between Family Support and Entrepreneurial Intention through the Mediating Role of Risk-Taking Ability

Family support can increase entrepreneurial intention by helping individuals develop the courage to take risks (Cardella et al., 2020). Motivation and assistance provided by the family can reduce the fear of failure and encourage individuals to be more confident in running a business (Yopie & Chrislin, 2022; Berliawan et al., 2024).

The Relationship between Educational Institution Support and Entrepreneurship Intention through the Mediating Role of Risk-Taking Ability

Educational institution support influences entrepreneurship intention by increasing students' risk-taking ability. Business training and mentoring programs provide a better understanding of entrepreneurship, so that students are better prepared to face business challenges (Suban & Gani, 2024). With the courage to take risks supported by educational institutions, students are more confident in exploring business opportunities and facing business uncertainties (Yang et al., 2021).

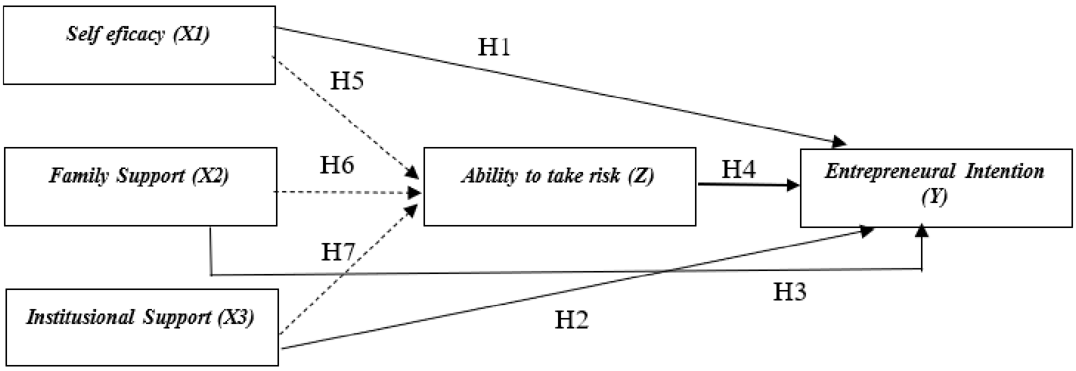

Figure 1. Research Model
Source: Martins et al. (2023) and Anjum et al. (2021)

From this research, the following hypothesis can be drawn:

H1: There is a positive influence of self-efficacy on students' entrepreneurship intention in Tangerang.
H2: There is a positive influence of family support on students' entrepreneurship intention in Tangerang.
H3: There is a positive influence of educational institution support on students' entrepreneurship intention in Tangerang.
H4: There is a positive influence of risk-taking ability on students' entrepreneurship intention in Tangerang
H5: There is a positive influence of self-efficacy on entrepreneurship intention through the mediating variable of risk-taking ability.
H6: There is a positive influence of family support on entrepreneurship intention through the mediating variable of risk-taking ability.
H7: There is a positive influence of educational institution support on entrepreneurship intention through the mediating variable of risk-taking ability.

RESEARCH METHOD

Object and Research Unit

The object of this research is Generation Z students who are currently studying at a university located in Tangerang City. In this study, the unit of analysis is determined with the following criteria:

1. Generation Z students aged 18–25 years.
2. Active students at a university located in Tangerang City.
3. Currently or have received entrepreneurship education through courses, practices, or extracurricular activities.

Sample & Population

The population studied were Generation Z students who were still actively studying at a university located in Tangerang City and had received entrepreneurship education. The sample is part of the population that has similar characteristics to the population as a whole. In accordance with the explanation of Kock & Hadaya (2016), the minimum sample required in this study is 160 respondents. However, this study obtained a total of 175 respondents, with 5 respondents not meeting the criteria, so the valid number used was 170 students. The sampling technique used in this study was Non-probability Sampling with the Purposive Sampling method. The respondents were distributed via Google Form questionnaire. This technique was chosen because the researcher has set certain criteria to determine respondents who are in accordance with the research objectives.

Data Analysis Method

This research is a descriptive study with a quantitative approach. This study uses primary data collected through a closed questionnaire, where respondents choose answers from the options provided. This research questionnaire uses a Likert Scale to measure respondents' perceptions of the variables studied (Sugiyono, 2018). The Likert Scale has five answer categories from strongly disagree to strongly agree.

The analysis methods in this study include descriptive statistics and Partial Least Square - Structural Equation Model (PLS-SEM). Meanwhile, PLS-SEM is applied to understand the relationship between variables and evaluate complex multivariate models using SmartPLS software (Ghozali & Latan, 2020). This analysis consists of a structural model (inner model) that assesses the relationship between latent variables, and a measurement model (outer model) that evaluates the validity and reliability of the research instrument. Testing of research instruments includes validity and reliability tests. Validity was tested using the Pearson correlation method on SmartPLS 3, which includes convergent validity—seen from the loading factor value (>0.7) and Average Variance Extracted (AVE>0.5)—as well as discriminant validity measured through the cross-loading value (>0.7) and the square root of AVE which is greater than the correlation between constructs (Ghozali & Latan, 2020).

Meanwhile, reliability was tested using Cronbach's Alpha and Composite Reliability with a minimum standard value of 0.7 (Hair et al., 2019). Hypothesis testing was carried out to test the relationship between variables with a significance test using the p-value at a 95% confidence level. If the p-value <0.05, the hypothesis is accepted, while if the p-value>0.05, the hypothesis is rejected (Hair et al., 2019). With the method used, this study is expected to produce valid and reliable findings in understanding the factors that influence entrepreneurship intention among generation Z students.

RESULTS AND DISCUSSION

From 175 respondents who filled out the questionnaire, 5 of them did not meet the research criteria because they had not received entrepreneurship education. Thus, the total respondents used in this study were 170 D-III and D-IV/S-1 students from various universities in Tangerang.

Respondent Profile

The respondent profile shows that of the 170 respondents, 55% were female (93 respondents) and 45% were male (77 respondents). Most of the respondents, namely 96% (163 people), were studying at the Diploma IV or bachelor's degree level, while the other 4% (7 people) were at the Diploma III level. Based on where they studied, 47% of the respondents came from Pelita Harapan University, 12% from the Open University, 8% from UNTIRTA and BSI respectively, and 6% from UIN Syarif Hidayatullah. The remaining 20% came from other universities that were not specifically mentioned. All respondents (100%) had received entrepreneurship education, indicating that all respondents had a basic understanding or experience in the field of entrepreneurship.

Measurement Model (Outer Model)

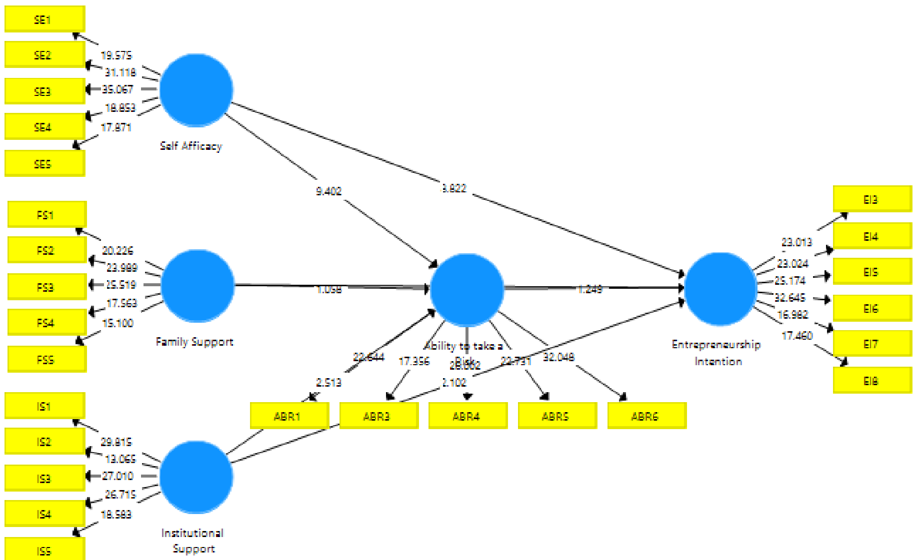

Figure 2. Inner Model

Loading Factor

The results of the first stage loading factor test showed that item ABR2 had a validity value of 0.655, EI1 of 0.331, and EI2 of 0.623. These values are below the threshold of 0.7 that has been set, so these items cannot be said to be valid for measuring the intended construction. After being deleted and re-tested for loading factors, it can be seen that all indicators in this study have loading factor values that exceed 0.7. All of these indicators have passed the loading factor test and can be tested further.

Reliability Test

Reliability test measures the consistency of a research instrument to ensure that the data collected is stable and reliable over time.

Table 1. Reliability Test

	Cronbach's Alpha	Composite Reliability
Ability to take Risk	0.847	0.891
Entrepreneurship Intention	0.873	0.904
Family Support	0.819	0.873
Institutional Support	0.848	0.892
Self Afficacy	0.834	0.883

Cronbach's Alpha and Composite Reliability values of all variables were above 0.7, confirming that the instrument used was reliable.

Average Variance Extracted (AVE)

Average Variance Extracted (AVE) assesses the convergent validity of a construct by measuring the average variance shared between a latent variable and its indicators; an AVE value above 0.5 indicates good validity.

Table 2. AVE Test

	Average Variance Extracted (AVE)
Ability to take Risk	0.622
Entrepreneurship Intention	0.611
Family Support	0.578
Institutional Support	0.624
Self Afficacy	0.602

All variables had AVE values above 0.5, indicating convergent validity was met.

Fornell-Larcker Criterion

Fornell-Larcker criterion can be evaluated discriminant validity by comparing the square root of AVE with the correlations between constructs; a construct should have a higher AVE square root than its correlation with other constructs.

Table 3. Fornell-Larcker Test

	Ability to take Risk	*Entrepreneurship Intention*	*Family Support*	*Institutional Support*	*Self Efficacy*
Ability to take Risk	0.788				
Entrepreneurship Intention	0.766	0.782			
Family Support	0.757	0.781	0.86		
Institutional Support	0.756	0.758	0.765	0.79	
Self Efficacy	0.746	0.749	0.761	0.738	0.756

All variables had a higher correlation with their own constructs compared to other variables, indicating good discriminant validity.

Structural Model (Inner Model)
Variance Inflation Factor (VIF)

Variance Inflation Factor (VIF) used to detect multicollinearity among independent variables; a VIF value above 5 (or sometimes 10) indicates high collinearity, which may distort regression results. All indicators had VIF values below 10, indicating no multicollinearity problems.

R-Square

Path coefficient and T-statistic: Path coefficients indicate the strength and direction of relationships between variables, while T-statistics determine their significance, with a T-value above 1.96 (at a 5% significance level) indicating a significant relationship.

Table 4. R Square Test

	R Square	*R Square Adjusted*
Ability to take Risk	0.769	0.764
Entrepreneurship Intention	0.586	0.584

The first discussed is the variable of risk-taking ability has an r square value of 0.181. This means that the variable of risk-taking ability can explain its exogenous variable of 0.764 or 76.4%, the remaining 23.6% cannot be explained by the variables in this study. The second is the variable of entrepreneurship intention has an adjusted r square value of 0.584. This means that the variable of entrepreneurship intention can explain the relationship between the independent variable and the dependent variable through the mediation variable of risk-taking ability of 58.4%, the remaining 41.6% cannot be explained by other exogenous variables outside this study. The R-square value indicates that the independent variables in this study have a fairly strong contribution in explaining the dependent variable.

Path Coefficient and T-Statistic

Table 5. Uji Path Coefficient

	Ability to take Risk	*Entrepreneurship Intention*
Ability to take Risk		0.766
Entrepreneurship Intention		
Family Support	0.085	
Institutional Support	0.224	
Self Efficacy	0.626	

Path coefficient is done to see whether exogenous variables have a positive or negative effect on endogenous variables. The output value produced by the path coefficient test ranges from -1 to +1 (Hair et al., 2019). Based on the table above, all Path coefficient values are positive. This means that all correlations between exogenous and endogenous variables have a positive relationship direction, or if the exogenous variable increases, it will also increase the endogenous variable.

Table 6. T-statistic Test

	Path Coefficient	*T Statistics*	*P-Value*	Conclusion
Self Efficacy -> Entrepreneurship Intention	0.721	0.085	0.000	Supported
Family Support -> Entrepreneurship Intention	0.189	0.075	0.012	Supported
Institutional Support -> Entrepreneurship Intention	0.144	0.07	0.042	Supported
Ability to take Risk -> Entrepreneurship Intention	-0.101	0.087	0.244	Not Supported
Family Support -> Ability to take Risk -> Entrepreneurship Intention	0.056	1.160	0.247	Not Supported
Institutional Support -> Ability to take Risk -> Entrepreneurship Intention	0.067	2.572	0.01	Supported
Self Efficacy -> Ability to take Risk -> Entrepreneurship Intention	0.049	9.862	0.000	Supported

Discussion

Self-Efficacy on Entrepreneurship Intention

The results of the study showed that self-efficacy has a significant and positive effect on entrepreneurship intention with a path coefficient of 0.721 and a t-statistic of 8.448 (>1.64). This means that the higher the self-efficacy of students, the greater their interest in starting a business. Individuals with high self-confidence are more optimistic in facing business challenges, managing a business, and adapting to change. Self-efficacy also plays a role in building resilience, so that individuals with high self-confidence are more motivated to pursue their business goals.

Family Support on Entrepreneurship Intention

Family support has a significant and positive effect on entrepreneurship intention with a path coefficient of 0.189 and a t-statistic of 2.527 (>1.64). The higher the family support, the greater the individual's Entrepreneurial Intention, either through moral encouragement, financial assistance, or business connections. This support creates a sense of security and optimism, helping individuals face business challenges with more confidence. On the other hand, lack of family support can be a major obstacle for individuals to start a business.

Support from Educational Institutions on Entrepreneurship Intention

Support from educational institutions has also been shown to have a significant and positive effect on entrepreneurship intention with a path coefficient of 0.144 and a t-statistic of 2.037 (>1.64). Institutions that provide entrepreneurship programs, training, seminars, and access to business incubators help students gain more mature business skills and knowledge. This support strengthens students' confidence in facing business challenges and increases their readiness to start a business.

Ability to Take Risks on Entrepreneurship Intention

The ability to take risks does not have a significant effect on entrepreneurship intention with a path coefficient of -0.101 and a t-statistic of 1.166 (<1.64). These results indicate that the courage to face uncertainty does not always encourage individuals to become entrepreneurs, because other factors such as social support and managerial skills play a greater role. Many individuals focus more on careful planning and risk mitigation strategies than simply the courage to face business uncertainty.

Self-Efficacy on Entrepreneurship Intention through Risk-Taking Ability

Self-efficacy through risk-taking ability has a significant and positive influence on entrepreneurship intention with a path coefficient of 0.48 and a t-statistic of 9.862 (>1.64). Individuals with high self-efficacy are more prepared to face uncertainty and are more willing to take risks, which ultimately increases their interest in starting a business. The ability to take risks also allows individuals to develop mental resilience and adaptability in the business world.

Family Support on Entrepreneurship Intention through Risk-Taking Ability

Family support through risk-taking ability does not have a significant effect on entrepreneurship intention with a path coefficient of 0.065 and a t-statistic of 1.160 (<1.64). This shows that although family support is important in building self-confidence, this support does not always affect an individual's courage in facing business risks. Other factors such as the individual's own readiness to manage risk play a greater role in encouraging entrepreneurship intention.

Educational Institutions for Entrepreneurship Intention through Risk-Taking Ability

Support of educational institutions through risk-taking ability has a significant and positive influence on entrepreneurship intention with a path coefficient of 0.171 and a t-statistic of 2.572 (>1.64). Educational institutions that provide entrepreneurship programs and access to business resources help students improve their risk-taking skills. With adequate provision, students are better prepared to face uncertainty and more confident in taking real steps to start their business.

CONCLUSION

Based on the results of this study self-efficacy has a strong and significant influence on entrepreneurship intention (path coefficient 0.721), meaning that individuals with higher self-confidence are more likely to pursue entrepreneurship. Family support (path coefficient 0.189) and educational institution support (path coefficient 0.144) also positively and significantly impact entrepreneurship intention, indicating that support from family and educational institutions encourages individuals to engage in entrepreneurship. However, the ability to take risks does not significantly affect entrepreneurship intention (path coefficient -0.101), suggesting that risk tolerance alone is not a determining factor. Meanwhile, self-efficacy positively influences entrepreneurship intention through risk-taking ability (path coefficient 0.48), showing that confidence in one's abilities enhances risk-taking behavior, which in turn fosters entrepreneurship intention. On the other hand, family support through risk-taking ability does not significantly affect entrepreneurship intention (path coefficient 0.065), meaning that family encouragement does not necessarily increase an individual's willingness to take risks. Conversely, educational institution support through risk-taking ability has a significant positive effect (path coefficient 0.171), implying that exposure to entrepreneurial education helps individuals develop risk-taking skills that drive entrepreneurship intention. These findings confirm the seven hypotheses, emphasizing the critical role of self-efficacy, direct and indirect support systems, and the complex relationship between risk-taking ability and entrepreneurial intention.

This study provides meaning by enriching the literature on factors that influence entrepreneurship intention, especially the role of self-efficacy, family support, and educational institution support, and challenges the assumption that risk-taking ability is the main factor in entrepreneurship. Managerially, these results encourage educational institutions to strengthen the development of students' self-efficacy through experience-based entrepreneurship programs, involving families in moral and practical support, and adaptive learning pressures on risk and mental resilience for prospective entrepreneurs.

Based on these findings, further research is recommended to develop more comprehensive measurements of the variables studied, especially self-efficacy in the context of entrepreneurship. In addition, in order to reduce subjective bias, a triangulation approach by combining questionnaire data, in-depth interviews, and direct observations can be used to obtain deeper and more valid insights. Future research should also use larger and more diverse samples in terms of demographics and socio-economic background so that the results obtained are more representative and can be generalized more widely.

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CREATING AND CAPTURING VALUE: STRATEGIC CORPORATE SOCIAL RESPONSIBILITY, RESOURCE-BASED THEORY, AND SUBTAINABLE COMPETITIVE ADVANTAGE ABIGAIL MCWILLIAMS AND DONALD S. SIEGEL (CRITICAL REVIEW)

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ABSTRACT

This article explores the strategic role of Corporate Social Responsibility (CSR) in building sustainable competitive advantage through the lens of Resource-Based Theory (RBT). In the era of globalization and increasing business competition, CSR is not only viewed as a social obligation but also as a business strategy that generates added value (social value) for companies. Referencing studies by McWilliams & Siegel, as well as Bagnoli & Watts, this article highlights how CSR can enhance corporate reputation, attract investors, and strengthen relationships with consumers and society. By integrating RBT with Hedonic Pricing and Contingent Valuation models, CSR is shown to influence consumer perceptions and support product differentiation strategies. Therefore, CSR serves as a crucial element in a company's strategic framework to achieve profit maximization and long-term sustainability.

***Keywords**: CSR; Resource-Based Theory; Competitive Advantage; Social Value; Hedonic Pricing; Contingent Valuation; Corporate Reputation*

ABSTRAK

Artikel ini membahas peran strategis *Corporate Social Responsibility* (CSR) dalam membentuk keunggulan kompetitif berkelanjutan melalui pendekatan *Resource-Based Theory* (RBT). Dalam konteks globalisasi dan persaingan bisnis yang semakin ketat, CSR tidak hanya dipandang sebagai bentuk tanggung jawab sosial, tetapi juga sebagai strategi bisnis yang dapat menciptakan nilai tambah (*social value*) bagi perusahaan. Penelitian yang dirujuk dalam artikel ini, termasuk dari McWilliams & Siegel, serta Bagnoli & Watts, menekankan bagaimana CSR dapat meningkatkan reputasi perusahaan, menarik investor, serta memperkuat hubungan dengan konsumen dan masyarakat. Melalui integrasi RBT dengan model *hedonic pricing* dan *contingent valuation*, CSR dinilai mampu memengaruhi persepsi konsumen dan mendukung strategi diferensiasi produk. Dengan demikian, CSR menjadi bagian penting dalam strategi perusahaan untuk mencapai profit maksimal dan keberlanjutan jangka panjang.

Kata Kunci: CSR; Teori Berbasis Sumber Daya; Keunggulan Kompetitif; Nilai Sosial; Harga Hedonis; Valuasi Kontingensi; Reputasi Perusahaan.

PENDAHULUAN

Dalam usaha mewujudkan keunggulan bersaing pada suatu perusahaan diperlukan strategi jangka panjang perusahaan yang harus dilakukan secara berkelanjutan atau terus menerus sehingga perusahaan dapat memperoleh profit yang diharapkan. Dengan mengembangkan suatu strategi bagaimana bisnis akan terus bersaing merupakan tujuan utama dari sebuah perusahaan, seperti saat ini di dalam era globalisasi yang terus mengalami perubahan, diharapkan agar perusahaan terus maju dan berkembang, kompetisi yang tinggi pada sektor bisnis tidak dapat diabaikan tapi harus dihadapi oleh perusahaan. Untuk itu diperlukan strategi yang efisien dan efektif yang diperlukan agar dapat unggul dalam persaingan dan strategi yang diambil akan dipengaruhi oleh faktor internal maupun eksternal dalam perusahaan.

TINJAUAN PUSTAKA

Penelitian oleh Cheraghalizadeh *et al.* (2021) yang dipublikasikan di *Sustainability* menunjukkan bahwa kapabilitas internal organisasi (*organizational capabilities*) secara langsung dan signifikan meningkatkan *competitive advantage* melalui hubungan dengan pelanggan, dengan *market dynamism* sebagai variabel moderasi. Ini menegaskan pentingnya *internal excellence* dalam menciptakan strategi yang efisien dan efektif, sekaligus menggarisbawahi pengaruh lingkungan eksternal (dinamika pasar) terhadap hasil strategi.

Ardiansyah *et al.* (2024) melalui tinjauan literatur menemukan bahwa CSR dalam strategi pemasaran mampu menciptakan *value* bersama (*shared value*), seperti loyalitas dan kepercayaan pelanggan. Ini amat penting, karena sebuah fokus bisnis keberadaannya dalam perusahaan pasti tidak akan berdiri sendiri tanpa adanya dukungan maupun peran dari masyarakat. Secara ekonomi, filosofi *profit maximizing* perusahaan tidak akan tercapai apabila produk yang dijual di pasar tidak laku. Sehingga dalam peranan konsumen sebagai pemakai suatu barang menjadi bagian yang penting dari komunitas masyarakat itu sendiri untuk menunjang keberlangsungan usaha sebuah perusahaan. Dengan adanya perusahaan di dalam lingkungan masyarakat yang baik akan membuat perusahaan merasa tenang dalam melakukan kegiatan operasionalnya karena kolaborasi masyarakat dan linkungan akan memberikan dampak positif. Disinilah peranan CSR (*Corporate Social Responsibility*) yang dilakukan perusahaan sangat penting apabila perusahaan bertujuan untuk menjalankan fungsi bisnis dengan baik.

Dalam jurnal McWilliams & Siegel (2011) membahas bagaimana menciptakan dan memperoleh nilai strategis perusahaan dalam tanggung jawab sosial dengan teori berbasis sumber daya RBT (*Resource-Bassed Theory*), juga untuk mengukur nilai strategis yang terlibat di dalam CSR itu sendiri dan teori mengenai keunggulan kompetitif yang terus berkelanjutan. Dimana perusahaan di haruskan memperhatikan pengaruh sosial yang dilakukan oleh perusahaan, karena *social value* tersebut dapat dihubungkan dengan tujuan perusahaan untuk dapat memperoleh profit yang tinggi.

METODE PENELITIAN

Penulisan ini merupakan *critical review*, *critical review* merupakan bentuk telah literatur yang bersifat mendalam, sistematis, dan analitis, dengan fokus tidak hanya pada peringkasan hasil-hasil studi terdahulu, tetapi juga pada evaluasi kritis terhadap metodologi, temuan, serta kontribusi teoritis masing-masing penelitian. Rowe (2022) menekankan bahwa *critical review* bertujuan mengidentifikasi konsistensi, kontradiksi, serta celah dalam literatur (*literature gaps*), sehingga dapat menghasilkan kontribusi konseptual yang signifikan dan mendorong pengembangan teori baru. Review ini menuntut penalaran reflektif serta sintesis temuan yang bersifat integratif.

Lebih lanjut, Paul & Criado (2020) menjelaskan bahwa *critical review* tidak hanya mengorganisasi pengetahuan yang ada, tetapi juga membandingkan berbagai pendekatan teoritis dan metodologis secara sistematis. Mereka menekankan pentingnya pendekatan analitis dalam membangun argumen ilmiah dan menyusun kerangka konseptual yang kuat sebagai dasar untuk penelitian selanjutnya.

HASIL DAN PEMBAHASAN

Pada jurnal ini, McWilliams & Siegel (2011) menulis bahwa nilai social yang dapat dipakai oleh perusahaan akan menjadikan strategi yang dibuat dalam tanggung jawab sosial perusahaan tersebut atau *corporate social responsibility* (CSR). CSR itu sendiri dapat dikatakan sebagai suatu strategi yang didefinisikan sebagai aktivitas apa pun yang "bertanggung jawab" yang memungkinkan perusahaan untuk mencapai keunggulan kompetitif yang berkelanjutan, walaupun motifnya untuk memaksimalkan profit.

Tujuan dari penulisan McWilliams & Siegel (2011) mengintegrasikan sumber daya tersebut dalam kerangka teori *resource-based theory* (RBT) sebagai konsep dan alat dari ekonomi, seperti penetapan harga hedonis (*Hedonic Pricing*) dan penilaian kontingensi (*Contingent Valuation*), dimana hasil dari CSR tersebut dapat menciptakan atau menghasilkan *social value* perusahaan.

Dengan menghubungkan CSR, RBT yang dalam hal ini sumber daya yang dipakai adalah konsumen, perusahaan dan masyarakat, juga dengan menggunakan model *Hedonic Pricing* dan *contingent valuation* dalam menciptakan nilai tambah barang yang akan dijual diharapkan dapat menentukan harga barang tersebut. Dalam penetapan harga, McWilliams & Siegel (2011) menunjukkan caranya RBT dapat memberikan struktur modal yang marginal sehingga diharapkan bahwa berinvestasi dalam CSR akan meningkatkan pengembalian keuntungan perusahaan. Untuk menentukan nilai strategis CSR di mana CSR dapat berkontribusi untuk keunggulan kompetitif yang berkelanjutan dan *social value* yang di dapat menjadi nilai tambah dalam perusahaan akan memaksimalkan strategi perusahaan yaitu memaksimalkan keuntungan (*profit maximazing*).

Penggunaan teori berbasis sumber daya (RBT) dan mengalokasi sebanyak banyaknya sumber daya dalam perusahaan diharapkan membantu mengukur nilai strategis perusahaan yang terlibat dalam CSR dimana sumber daya yang dipakai adalah sumber daya yang berharga. Untuk mencapai tujuan ini dengan menerapkan kerangka kerja RBT melalui dua konsep nilai yaitu nilai untuk konsumen dan nilai untuk perusahaan. Menggunakan dua teori untuk menentukan nilai prodak atau layanan perusahaan kepada konsumen yaitu harga hedonis, dan model penilaian kontinjensi, sehingga diharapkan RBT dapat menjadi struktur untuk menentukan nilai strategis CSR.

Penelitian lain dari McWilliams & Siegel (2001) tentang ada implikasi manajerial untuk tanggung jawab sosial perusahaan dengan melakukan CSR dipilih sebagai tanggung jawab moral yang dihadapi manajer ketika menghadapi CSR dengan menggunakan RBT, diharapkan model yang dipakai dalam penelitian ini akan menjadikan manajemen perusahaan fokus pada hubungan antara CSR dan kinerja perusahaan, dengan tujuan *profit maximazing*.

Bagnoli & Watts (2003) mengemukan pandangan dimana CSR sebagai ketentuan perusahaan yang berhubungan dengan publik lokal misalnya untuk pengembangan masyarakat sekitar yang bersifat sosial maupun yang mengarah pada pemeliharaan lingkungan hidup misalnya pengurangan polusi dalam suatu daerah. Bagnoli & Watts (2003), berpendapat bahwa CSR yang strategis terjadi ketika perusahaan mengaitkan penyediaan barang publik yang sesuai dengan lingkungan sekitar dengan penjualan barang atau layanan pribadi misalnya dengan label ramah lingkungan dan mereka berhipotesis bahwa pelanggan melihat perusahaan yang melakukan CSR sebagai sinyal positif mengenai karakteristik barang atau jasa perusahaan yang akan mereka jual sehingga barang tersebut mempunyai daya jual yang tinggi yang otomatis akan dapat menaikkan harga penjualan barang tersebut. Dengan demikian, konsumen berpendapat bahwa perusahaan menjual pengalaman atau mempercayai barang atau jasa yang dijual dengan harga maksimal.

Dalam Manasakis *et al.* (2007) berpendapat bahwa CSR sebagai variabel strategi dalam kompetisi. Nyborg & Brekke (2004) menegaskan bahwa ketentuan tersebut memungkinkan perusahaan untuk mengembangkan kemampuan sumber daya manusia. Sehingga menegaskan bahwa CSR adalah strategi penyaringan pasar tenaga kerja yang memungkinkan perusahaan untuk menarik motivasi tinggi dan karyawan yang produktif.

Dalam RBT ini juga diintegrasikan dengan pemasaran dengan memasukkan sumber daya yang ada untuk membuat konsumen atau masyarakat sadar dan mengetahui proses CSR yang dilakukan oleh perusahaan dimana perusahaan menggunakan iklan dan promosi di media sosial yang dianggap bisa menjadi promosi yang penting dengan biaya yang lebih rendah tapi dapat memperoleh peningkatan reputasi perusahaan. Dengan reputasi ini maka perusahaan dianggap mempunyai tanggung jawab sosial dalam lingkungan sekitarnya dan bukan hanya memikirkan keuntungan semata sehingga presepsi konsumen akan positif terhadap perusahaan tersebut.

Russo & Fouts (1997) menganggap CSR sebagai mekanisme untuk mengembangkan sumber daya dan kemampuan lingkungan disekitar perusahaan tersebut. Keunggulan strategis lain yang mungkin dikaitkan dengan CSR termasuk kemampuan untuk menarik investor, dimana investor bukan hanya melihat perusahaan yang mempunyai laporan keuangan yang baik tapi juga perusahaan yang melakukan CSR yang bertanggung jawab. Pendapat Baron (2001) CSR oleh perusahaan dikatakan sebagai jasa atau barang yang bersifat sosial akan menjadi pertimbangan yang positif karena terkait dengan aktivitas inovatif dari perusahaan.

Menurut Donnet *et al.* (2007) menguraikan implikasi manajerial bagaimana konsumen menilai atribut tertentu dapat memengaruhi tingkat bisnis strategi dalam tiga cara, baik dari sisi pendapatan dan biaya. Yang pertama adalah langsung melalui "*value proposition*," yaitu untuk mengetahui berapa banyak yang rela dibayarkan oleh pelanggan (rata-rata) untuk fitur tertentu. Informasi yang diperoleh dari analisis hedonis juga dapat mempengaruhi pilihan segmen pasar dan bagaimana posisi perusahaan itu sendiri dalam suatu segmen untuk mencapai *Sustainable Competitive Advantage* (SCA). Para penulis mencatat bahwa setiap segmen memiliki infrastruktur dan rantai pasokan dan kelebihan sendiri sendiri, yang memungkinkan manajer untuk memilih di antara segmen kualitas yang berbeda dan juga memberi tahu mereka tentang bagaimana mengatur dan mengalokasikan sumber daya untuk menanggapi peluang pasar dan mengelola rantai nilai yaitu produksi, pemrosesan, dan distribusi dalam perusahaan yang bisa menghasilkan *revenue*.

Dalam pembahasan ini contoh yang dipakai adalah sampo dengan menggunaka analisis regresi berganda untuk memperkirakan persamaan seperti berikut:

$$Pn = b0 + b1PACKAGINGn + b2SCENTn + b3BRANDn + b4CSRATTRIBUTEn + Un, (1)$$

Dengan persamaan ini, dikatakan atribut pada harga dapat dipengaruhi oleh semua atribut lainnya yang disertakan pada CSR dan juga produk hasil dari CSR itu sendiri sebagai "nilai" tambah yang ditambahkan dengan harapan karakteristik CSR akan menjadi nilai tambah suatu perusahaan, sehingga perusahaan dapat memposisikan dirinya untuk memaksimalkan laba dengan menaikkan harga produknya dan konsumen diharapkan dapat membeli barang tersebut. Dalam metode *contingent valuation* menurut Klein & Leffler (1981) dapat meningkatkan akses ke pasar modal, dan menarik investor adalah hal yang ingin dicapai perusahaan sehingga perusahaan berusaha memberikan portofolio positif dalam laporan keuangannya. Fombrun & Shanley (1990) berkontribusi pada literatur tentang reputasi perusahaan dengan melakukan analisis empiris terhadap faktor-faktor yang memengaruhi perusahaan reputasi diharapkan reputasi tersebut dapat dijadikan nilai. Mereka menemukan dukungan untuk hipotesis bahwa semakin besar kontribusi perusahaan pada nilai sosial maka akan memberikan reputasi yang baik yang menjadikan reputasi tersebut sebagai iklan gratis bagi perusahaan yang akan memberikan dampak pada reputasi perusahaan. Dapat dikatakan bahwa strategi CSR dapat memberikan tambahan untuk RBT melalui strategi diferensiasi yang dapat meningkatkan reputasi maupun merek dari suatu perusahaan yang menghasilkan barang dan jasa.

Kritik

Ada beberapa kritik yang ingin disampaikan pada artikel ini yaitu:

1. Di Indonesia CSR adalah merupakan program pemerintah pada tulisan ini tidak dibicarakan mengenai hal ini tapi jika dilihat pada kondisi di Indonesia maka faktor CSR ini perlu dibahas karena termasuk dalam faktor eksternal yang tidak bisa diabaikan. Undang undang yang mengatur tanggung jawab sosial perusahaan yang bersifat hukum secara yuridis ada dalam Undang-undang No. 40 Tahun 2007, tentang bagaimana Perseroan Terbatas, pada Bab V, Pasal 74. Di pasal ini menjelaskan mengenai tanggung jawab sosial dan lingkungan oleh perusahaan sesuai dengan eksistensinya dalam kegiatan seluruh bisnis. Seiring dengan perkembangan yang terjadi dengan menghadapi dampak era globalisasi, serta kemajuan era informasi teknologi yang begitu cepat, dan keterbukaan pasar yang semakin luas sehingga persaingan tidak dapat diabaikan dan usaha CSR ini dilakukan sehingga perusahaan harus secara nyata dan serius memberlakukan CSR
2. Strategi pada setiap perusahaan untuk melakukan strategi CRS tidak sama hal ini disebabkan karena sumber daya dari masing-masing perusahaan berbeda beda sehingga keunggulan perusahan satu dengan yang lain juga berbeda. Jadi apa yang menjadi strategi perusahaan lain belum tentu dapat berhasil dengan baik apabila dilakukan pada perusahaan yang lain. Sehingga dalam strategi perlu dilihat dari segi keunikan sumber daya perusahaan tersebut, dan hal ini tidak bisa digeneralisasikan begitu saja. Sumber daya perusahaan tidak mudah untuk diaplikasikan oleh perusahaan lain karena disebabkan oleh tiga hal, yaitu: kondisi atau keadaan historis yang unik, serta hubungan dan kemampuan yang dimiliki perusahaan serta budaya yang ada pada masing masing perusahaan.
3. RBT yang digunakan yaitu konsumen, perusahaan dan masyarakat merupakan sumber daya yang tidak cukup untuk menjadi variabel perhitungan, hal itu disebabkan karena dalam segi nilai perusahaan tidak dapat diidentifikasikan dengan jelas. Dalam Cheraghalizadeh *et al.* (2021) dalam publikasinya di *Sustainability* menemukan bahwa kapabilitas internal organisasi memiliki dampak langsung dan signifikan terhadap peningkatan keunggulan bersaing melalui interaksi dengan pelanggan. Temuan ini menyoroti peran penting keunggulan internal dalam merancang strategi yang efisien dan efektif, sekaligus menunjukkan bahwa dinamika pasar sebagai faktor eksternal turut memoderasi hubungan tersebut dan memengaruhi pencapaian strategi secara keseluruhan. Penelitian lain

menunjukkan hasil bahwa orientasi atau perhatian pasar akan secara signifikan saling berhubungan dan memengaruhi terhadap kinerja pada perusahaan dan hasil penelitiannya dikatakan bahwa orientasi pasar berpengaruh signifikan terhadap kinerja perusahaan, yang dapat ditemukan melalui inovasi yang terjadi dalam perusahaan yang akan menjadi variabel intervening. Sehingga pada jurnal ini RBT yang digunakan sebaiknya ditambahkan dengan variabel orientasi pasar karena berbicara mengenai harga.

4. Kritik selanjutnya untuk artikel ini adalah dimana dalam pembahasan ini contoh yang dipakai adalah sampo dengan menggunakan analisis regresi berganda untuk dapat memperkirakan persamaan seperti berikut:

$$Pn = b0 + b1\mathit{PACKAGING}n + b2\mathit{SCENT}n + b3\mathit{BRAND}n + b4CSR\mathit{ATTRIBUTE}n + Un, \quad (1)$$

   Dalam persamaan ini, tidak menunjukan data yang bisa dihitung dimana hanya sebuah persamaan yang tidak memiliki data. Menurut Prakoso, adanya penilaian kinerja pada perusahaan dengan membandingkan kinerja tersebut pada perusahaan dengan perusahaan pesaing adalah merupakan informasi yang penting untuk bisa menilai peningkatan harga pasar yang terjadi. Pengukuran ini akan memberikan informasi mengenai apakah perusahaan dengan mudah dapat ikut serta dengan *trend* pasar tersebut atau mereka menunjukkan perilaku peningkatan kinerja yang tidak sama secara substansi dibandingkan dengan industri lain yang ada.
5. Penelitian ini tidak ada uji hipotesis mengenai variabel yang dapat mempengaruhi harga yang diperkirakan sangat signifikat tapi digunakan nilai tambah CSR yang diharapkan dapat memberikan pengaruh signifikan terhadap harga (*prize*). Perhitungan ini tidak bisa menjelaskan apakah dengan adanya *PACKAGING* yang berlogo “Eco” dapat berpengaruh signifikan pada harga karena asumsi yang digunakan berdasarkan reputasi karena sulit menentukan harga barang sosial yang akan diperdagangkan misalnya udara yang dihirup karena konsumen berpikir bahwa udara adalah komponen gratis.
6. Dalam penelitian perlu dilakukan juga pengujian lima asumsi klasik uji normalitas bertujuan untuk mengetahui apakah dalam sebuah model regresi dengan menggunakan pengujian, variabel independen berpengaruh pada variable dependen dengan menggunakan atau residual distribusi normal, tapi dalam hal ini tidak terlihat data yang bisa diuji. Pengujian normalitas penelitian biasanya menggunakan *Least Square* dengan melihat nilai *Jarque Bera*. Dalam pengujian 5 asumsi klasik yaitu uji multikolinearitas, heterokedastisitas, dan autokorelasi, normality serta heteroskedastis. Uji multikolinearitas antara *independent variable* dilakukan untuk melihat nilai VIF (*Variance Inflation Factors*), uji heterokedastisitas melihat Prob. F menggunakan *Durbin-Watson* seperti yang ditulis oleh Gujarati & Porter (2009).
7. Sebagai usulan dari kritik adalah menambahkan faktor budaya lokal untuk CSR seperti di Indonesia yang nyatanya dapat memberikan nilai tambah misalnya penelitian yang dilakukan oleh Rahmawati (2011) dengan objek penelitian adalah Kosmetik Wardah yang identik dengan prodak “halal” menunjukan bahwa tingkat penggunaan kosmetik Wardah adalah 65,56% karena menggunakan label “halal”dalam kemasan produknya dah label halal ini seakan-akan mengidentifikasikan bahwa kosmetik tersebut dikhususkan untuk agama tertentu dengan iklan yang dibuat menggunakan model model berhijab. Pada kenyataannya produk kosmetik Wardah bukan hanya dipakai untuk kalangan tertentu saja bisa dipakai semua kalangan. Dengan faktor budaya lokal yang agamawis menunjukkan tingkat pemasaran prodak tersebut terjadi peningkatan dari waktu ke waktu. Usaha

kosmetik Wardah yang awalnya untuk mengikuti gejala sosial tentang prodak yang dianggap halal memberikan hasil 15 tahun kemudian. Pada tahun 2010 ke 2011, semua unit produk yang dijualnya mengalami peningkatan sebanyak 20 persen yaitu menjadi lebih dari 10 juta unit. Dan yang terjadi selanjutnya adalah penjualan kosmetik Wardah meningkat begitu pesat dengan penjualan rata rata 50 persen pada setiap tahunnya.

8. Kritik selanjutnya adalah untuk melakukan penelitian dan CSR perusahaan harus bisa mengalokasikan dana untuk mengadakan riset untuk pengembangan produk, melalui riset penelitian yang sesuai dan kemudian dilanjutkan dengan pengembangan produk yang baik bisa meningkatkan fungsi pada departemen penelitian di persahaan dan pengembangan untuk memperoleh keberhasilan produk baru akan menaikkan kinerja dari perusahaan. Tapi ini apakah sudah dihitung dalam *price* yang nantinya akan menjadi harga barang tersebut harga yang diharapkan untuk memaksimalkan profit. Karena penelitian yang dilakukan oleh McWilliams & Siegel (2001) dikatakan meskipun perusahaan sudah melakukan CSR dengan perusahaan yang tidak melakukan CSR tetap mendapatkan profit dalam arti tetap mendapatkan, sedangkan pada pembahasan diatas dikatakan bahwa untuk mengelolah CSR diperlukan dana yang tentunya akan lebih besar biayanya dari perusahaan yang tidak melakukan CSR. Ini perlu dihitung dengan menggunakan model atau variable yang lain agar supaya nilai CSR bisa digunakan untuk memperoleh nilai yang maksimal.
9. Perusahaan yang melakukan iklan di media sosial, harus tetap menjaga "*image*" dengan konsisten sehingga prodak yang sudah disampaikan sebelumnya bisa terus *continoue* sehingga bisa dilihat oleh masyarakat bahwa perusahaan konsisten melakukan CSR. Perlu diingat bahwa kesalahan kecil yang dilakukan dapat menjadi kritik yang membawa pengaruh luas karena sudah menjadi konsumsi umum yang bisa merusak reputasi perusahaan.
10. Kritik selanjutnya adalah sebaiknya perusahaan jika melaksanakan program CSR harus bisa melihat kepentingan jangka panjang perusahaan yang bisa dibuatkan melalui program yang berhubungan dengan pengembangan SDM karena pengembangan SDM berhubungan dengan kepentingan bisnis perusahaan dan program-program yang dilakukan bukan hanya bersifat *charity* saja. Program CSR dapat dilakukan dengan memberikan bantuan usaha bagi masyarakat sekitar dengan pembentukan dan pengembangan UMKM yang nanti hasil dari produk tersebut dapat bermanfaat kembali bagi kepentingan industri perusahaan dan dapat menyokong industri perusahaan. Upaya lain yang dapat dikembangkan yaitu dengan pemberian bantuan studi ke penduduk sekitar yang potensial untuk dapat sekolah ke jenjang pendidikan yang lebih tinggi dan baik sehingga nantinya dapat direkrut dan diterima untuk pemenuhan kebutuhan SDM didalam perusahaan seperti yang dilakukan dengan CSR di Jepang.
11. Dalam pasar saham, *sentiment negative* yang berhubungan dengan pribadi pemilik perusahaan dapat mengakibatkan turunnya harga saham, contohnya kejadian dimana harga saham perusahaan Sandiaga Uno yaitu PT. Saratoga Investama Sedaya Tbk (SRTG) berada di posisi 3530, turun 310 poin atau minus 8,07 persen, dibuka anjlok pada perdagangan perdana pascapemilu. Ini bisa menunjukkan bahwa faktor eksternal dapat berpengaruh terhadap saham perusahaan, walaupun masih harus dibuktikan terlebih dahulu dengan perhitungan ilmiah.

KESIMPULAN DAN SARAN

Keinginan perusahaan untuk memperoleh keunggulan bersaing yang tujuannya yaitu memberikan nilai tambah *(value added*) terhadap perusahaan, berkaitan erat dengan cara bagaimana perusahaan tersebut memilih strategi dan sunguh sungguh dengan serius dapat melaksanakan strategi tersebut maupun strategi yang masih direncanakan ke dalam praktik nyata sehingga dapat menjadikan perusahaan bernilai bagi lingkungan sekitar dan tentunya hal ini berpengaruh besar dengan tujuan perusahaan untuk memaksimalkan profit.

Penting untuk diingat bahwa dalam mencapai atau memperoleh kesuksesan strategi yaitu dengan mengidentifikasi dan memahami asset perusahaan yang sesungguhnya, dalam hal ini adalah dengan *resources* yang membuat perusahaan berbeda dengan yang lain. Perusahaan perlu untuk terus memperhatikan dan memprioritaskan kepentingan social ditempat atau lingkungan sekitar yang menjadikan target CSR (*Corporate Social Responsibility*) dimana kegiatan tersebut dapat memberikan reputasi yang tentunya dengan reputasi yang baik dapat memberikan presepsi yang positif sehingga konsumen dapat rela membeli prodak yang dihasilkan oleh perusahaan dan prodak tersebut dapat diterima dan laku di pasaran. Dengan pertimbangan tersebut diharapkan perusahaan dapat memaksimalkan profit yang merupakan tujuan dari strategi perusahaan.

Keunggulan bersaing yang berkesinambungan diperlukan kemampuan dan ketrampilan juga strategi pelaku riset dalam pengembangan produk yang pasti memerlukan dana yang tidak sedikit. Perusahaan berusaha agar biaya yang dilakukan pada CSR akan sebanding dengan *revenue* perusahaan dan *revenue* selalu menjadi perhatian untuk ditingkatkan. Perusahaan menggunakan metode hedonis dan penilaian kontinjensi yang merupakan teori sosial yang bertanggung jawab dengan lingkungan dan tidak ada pasar pada lingkungan seperti ini. RBT yang digunakan dianalisa dalam 2 nilai yaitu konsumen dan nilai perusahaan. Mengenai nilai perusahaan akan membahas juga mengenai sumber daya yang berharga yang dapat dilakukan dengan terus menaikkan kualitas karyawan sehingga dalam *market* dapat membuat perusahaan tersebut tidak mudah untuk digantikan oleh perusahaan lain baik dalam hal sumber daya maupun aktivitas perusahaan. Dengan demikian secara umum dapat disimpulkan bahwa perusahaan perlu meningkatkan kinerjanya agar memiliki keunggulan bersaing yang pastinya berkelanjutan. Namun hal tersebut tidak akan terlepas dari peranan variabel lain misalnya orientasi pasar, orientasi pembelajaran dan inovasi yang merupakan bagian dari faktor eksternal yang unprediktibel.

Kontribusi CSR yang bertujuan dalam memaksimalkan profit perusahaan pada kegiatan ekonomi masyarakat adalah dengan turut serta melibatkan seluruh komponen masyarakat, dengan bekerjasama antar perusahaan dan masyarakat dalam kegiatan CSR yang sudah ditentukan bersama. Kemiskinan akan menjadi musuh bersama yang harus dapat ditanggulangi oleh semua pihak baik oleh perusahaan dimana kondisi tersebut berlangsung maupun kemauan masyarakat untuk berubah dapat menjadi faktor penting dalam CSR yang bisa berintegrasi dengan budaya lokal. Dalam pelaksanaan hal tersebut paling tidak terdapat 3 prinsip utama yang harus diperhatikan, yaitu: (1) Bagaimana format CSR yang dipilih harus yang sesuai dengan nilai lokal masyarakat; (2) Kemampuan dan kekuatan perusahaan harus dipertimbangkan dan dihitungkan terkait dengan kapasitas SDM dan perusahaan, (3) Adalah bagaimana peraturan dan kode etik dalam perusahaan atau industri itu sendiri. Berdasarkan pada integrasi ketiga prinsip ini, masyarakat diharapkan akan bersama sama dengan perusahaan terus membangun kemampuan dan kekuatannya dalam menghadapi dan memecahkan permasalahan yang mereka hadapi dan mungkin terjadi dalam pencapaian kesejahteraan hidup yang lebih baik.

CSR juga berkontribusi positif secara otomatis dapat menaikkan reputasi perusahaan, sebuah reputasi dapat menjadi sumber daya strategis karena dapat menyebabkan harga premium karena akan memperoleh loyalitas konsumen sehingga dapat meningkatkan pendapatan. Hai ini dikatakan dapat mengurangi biaya personil dan mengurangi biaya modal dan dapat menghasilkan karyawan yang produktif. Nilai sumber daya atau RBT perusahaan dapat diintegrasikan dengan reputasi perusahan karena faktor utama penghambat reputasi perusahaan adalah perusahan yang tidak peka akan lingkungannya yang didasarkan pada perilaku perusahaan yang tidak mengerti ataupun masa bodoh. Ini akan erat kaitannya dengan harapan harapan masyarakat' (*public expectations*). Dengan harapan positif yang dapat meningkatkan reputasi dimana reputasi ini dapat menjadi iklan berbiaya rendah yang bisa meningkatkan tingkat kepercayaan konsumen dan investor sehingga perusahaan bisa memaksimalkan profit. Dalam hal ini tujuan utama perusahaan untuk menciptakan nilai strategis melalui tanggung jawab sosial dalam lingkungan perusahaan tersebut melalui keunggulan bersaing yang berkesinambungan akan memberikan hasil yang positif yaitu tercapainya tujuan perusahaan untuk memaksimalkan profit.

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ORTHOGONAL ARRAY TESTING STRATEGY (OATS) TECHNIQUE JEREMY H. HARREL A LITERATURE REVIEW

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ABSTRACT

Knowledge about experimental design is mostly done in agriculture or animal husbandry, it is still rarely done in other fields, especially in marketing. However, experimental design research was then carried out in the industrial field, and some has also been done for marketing. Orthogonal Array (OA) is one part of a group of experiments that only use part of the total conditions, this part can be only half, a quarter or an eighth of a full factorial experiment. It can be said that Orthogonal arrays are used to design efficient experiments and analyze experimental data by using only part of the total conditions so that in this case it minimizes the number of experiments, where the number of experiments will be able to provide as much information as possible about the influencing factors. This discussion will also discuss how to use Orthogonal Array in research on industrial products. The use of experimental design which continues to develop will later be very useful in marketing to see how a product is desired by consumers and can make the resulting product better and can save costs so that the use of this experimental design research can be used in decision making for the use of a product of goods and services.

Keywords: Experimental Design; Orthogonal Array; Consumer

INTRODUCTION

In making industrial decisions on a product to be marketed, there will definitely be observations with research to determine the quality of a product. In statistical quality control, the problem-solving techniques used will be used to monitor, analyze, or control, analyze and most importantly improve the product, where the process uses statistical methods.
In principle, quality is determined and measured based on product quality characteristics which consist of several general properties, namely as follows:

1. Physical which can be in the form of weight, length, size, volume and others
2. In relation to the five senses which are also called sensory, namely regarding taste, appearance, model, color, shape and so on.
3. Related to time orientation, namely regarding maintainability, serviceability and reliability and others.
4. Cost-oriented, namely related to the cost dimension, namely the price or cost of a product that must be paid by consumers.

When we talk about measuring the quality performance of a product, there are three levels that will be carried out, namely:

1. Initial measurement, which is carried out to measure the process carried out by measuring the activities and steps of the process and controlling the desired characteristics, for example how long the response is when customers ask about a product via the website or by telephone, the time of delivery of goods to customers and others.
2. Measurements carried out at the output level, in this measurement is how to measure the comparison of the output that has been produced to the specifications that customers want. For example, whether the product produced has defects such as several car products that have been recalled or by seeing if there are specifications that are not in accordance.
3. The next measurement is measurement at the outcome level where at this stage it will assess whether a product has met the needs or expectations desired by consumers. By looking at complaints from customers and how many items are returned by customers.

LITERATURE REVIEW

General View of Experimental Design

Montgomery (2008) in his book defines experimental design as a systematic effort in designing a design by conditioning several factors. Experimental design must follow the experimental method. Quoted from Suryaningsih (2010), experimental design is all the processes required in planning and implementing an experiment. In a broader sense, experimental design includes the following processes:

1. Identifying problems in the experiment
2. The identified problems are then viewed in the conceptual framework
3. Formulating by making specifications of the objectives and hypotheses that will later be tested
4. Conducting or building research
5. Selecting and defining the variables to be measured
6. Determining the procedures and sampling techniques used
7. Compiling the tools and techniques used to collect data
8. Coding, editing and processing data
9. Analyzing data and choosing statistical procedures
10. Then reporting the results of the research.

In research we know that there are factors that can cause product diversity, namely interference factors. There are 3 types of disturbances, namely:

1. External factor disturbance
   As the name implies, the meaning of external disturbance factors is disturbances from sources of variability originating from outside the product. This external disturbance is closely related to the environment where this condition can affect the ideal function of a product.
2. Internal factor disturbance
   Internal disturbances can be related to factors that can damage a product so that it does not reach its target.
3. Inter-unit disturbance
   Disruptions that occur due to diversity from unit to unit are closely related to factors that can cause differences between each product that has been made even though they are in the same specifications. This variation cannot be avoided in product parameters from one unit to another.

As for the disturbance factor, it cannot be simply eliminated, because this disturbance factor could be in the system. If the disturbance factor cannot be eliminated, it will affect the quality characteristics of the product, resulting in the product not reaching the target value. By looking at this, in the process of a product, it tries to reduce losses in the production process by controlling the factors on the disturbance factor so that the product specifications will be clearly identified and the quality characteristics are not sensitive to disturbances.

P-DIAGRAM

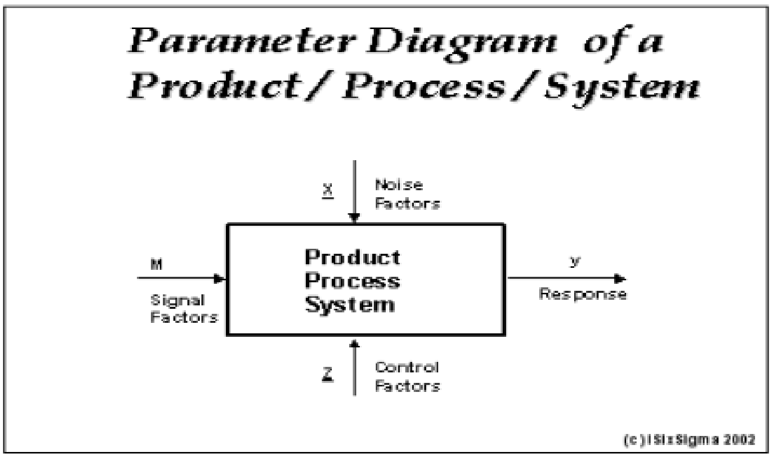


Figure 1. Parameter Diagram of Product Proses System

There are 4 approaches that can be taken to reduce the variance or diversity that occurs, namely:

1. By finding and eliminating the causes of differences
2. Taking a way to narrow tolerance
3. Using a robust design
4. And taking a drastic way, namely by throwing away defective products.

By looking at this approach, the best way to reduce product diversity is to carry out and apply a robust design. This method consists of making product performance that is not sensitive to disturbance factors. In its implementation, the tolerances carried out do not have to be too tight, and the work environment does not have to be controlled so tightly, it can use more affordable or cheaper materials so that it is cost-effective.

Classification in Experimental Design

Because there are many types of experimental designs, they are then classified based on the allocation or placement of factor combinations (treatments) and the degree of randomization of the experiment (Park, 1996). Where the classification is as follows:

1. Factorial Design
   This experimental design is to find all possible combinations of treatments formed from the factors that have been considered. The order is determined completely by being done randomly when the combination is selected. Fractional Factorial Design This experimental design is to investigate part of all possible combinations of treatments. Similar to factorial design, the order in which the treatment combinations are selected is completely random. Included in this class are Orthogonal Arrays designs, Plackett-Burman designs, Latin Square designs, and Graeco-Latin Square designs. This design is used when the cost of conducting an experiment is high and time-consuming.
2. Randomized Complete Block Design, Split-plot Design, and Nested Design.
   A design in which each block contains all possible treatments, and the only randomization of treatments is within that block, is called a randomized complete block design.
   All possible combinations of treatments can be done in these designs, but there are some restrictions on the use of randomization.
3. Incomplete Block Design
   In the Incomplete Block Design design, it is used when we cannot run all treatments in each block due to lack of experimental apparatus or inadequate facilities. If each treatment is not presented in each block in a randomized complete block design, it is called an incomplete block design.
4. Response Surface Design and Mixture Design
   The purpose of the response surface design is to explore a regression model to find a functional relationship between the response variable and its factors or independent variables, and is also used to find the optimal conditions of these factors.

Orthogonal Arrays

As mentioned above, Orthogonal Array (OA) is one part of the Fractional Factorial Design experimental group that only uses part of the total conditions, where this part may be only half, a quarter or an eighth of a full factorial experiment.

When this happened, this "numerical curiosity" was then taken up by the statistical community and used in statistical test design. Genichi Taguchi was the first proponent of orthogonal arrays in test design. His technique, later known as the Taguchi Method, has been a mainstay in every experimental design in manufacturing for decades.

The Taguchi method was introduced by its founder, (Taguchi, 2001) a quality control consultant. This is a new methodology in engineering which then aims to improve product and process quality and can reduce costs and resources to a minimum.

In the Taguchi method, a matrix called an orthogonal array is used to determine the minimum number of experiments that can provide as much information as possible on all factors that affect the parameters. The most important thing about orthogonal arrays is the selection of the combination of levels of input variables for each experiment.

According to Taguchi, there are two general aspects of quality, namely design quality and conformance quality. Design quality is the variation in quality levels in a product that is intentional, while conformance quality is how well the product meets the specifications and allowances required by the design.

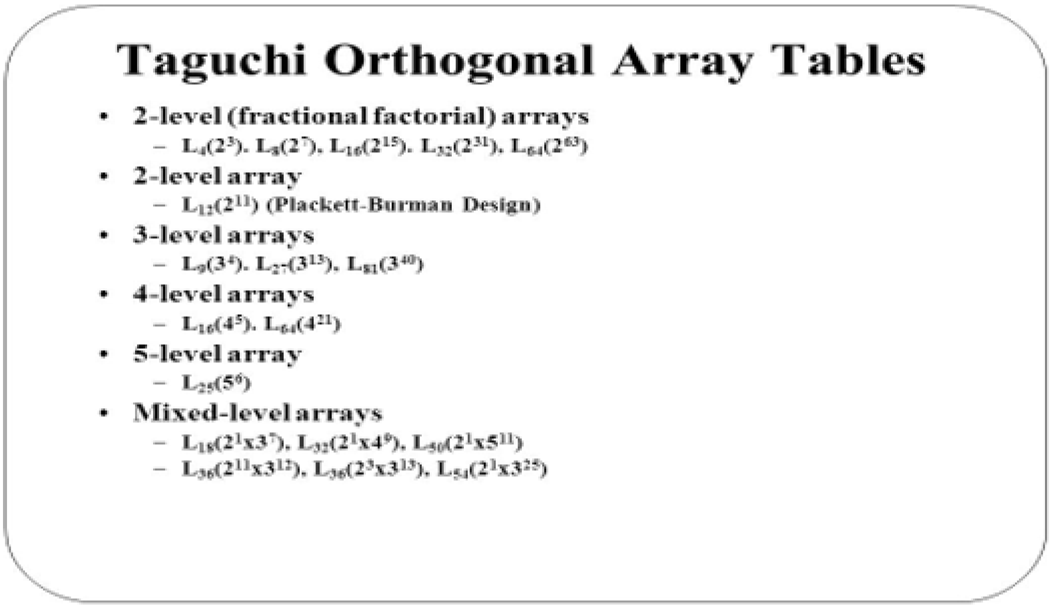
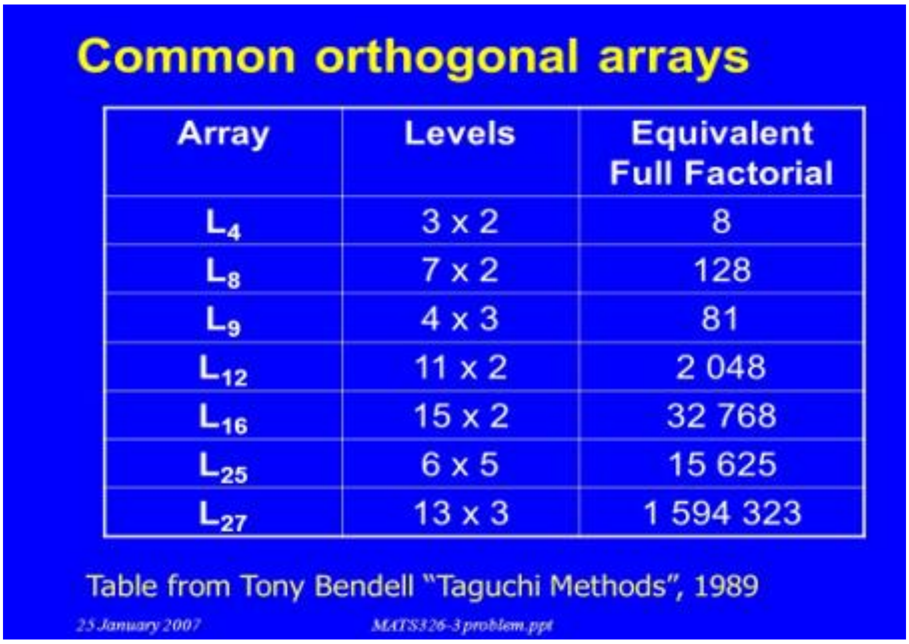


Figure 2. Taguchi Orthogonal Array Tables

In the Taguchi method, a special set of matrices called Orthogonal Arrays is used. This standard matrix is how to determine the minimum number of trials that can provide as much information as possible on all factors affecting the parameters. So, the most important part of the Orthogonal Array method lies in choosing a combination of levels of input variables for each trial.



Common orthogonal arrays

Array	Levels	Equivalent Full Factorial
L_4	3 x 2	8
L_8	7 x 2	128
L_9	4 x 3	81
L_{12}	11 x 2	2 048
L_{16}	15 x 2	32 768
L_{25}	6 x 5	15 625
L_{27}	13 x 3	1 594 323

Table from Tony Bendell "Taguchi Methods", 1989

25 January 2007 MATS326-3problem.ppt

Figure 3. Common Orthogonal Arrays

According to Wahjudi et al. (2001), Orthogonal Array has the following benefits:

1. The conclusions drawn can cover the scope of the control factors and each of its levels as a whole
2. It saves a lot of time in carrying out experiments because it does not use the full factorial experiment principle like ordinary experiments but uses the fractional factorial experiment principle. This means that not all level combinations must be tested, but only a few. To determine which level should be used in data collection, it must refer to the standard OA model.
3. It has ease of data analysis

By looking at this approach, the best way to reduce product diversity is to do and implement robust design. This method consists of making product performance that is not sensitive to disturbance factors. In its implementation, the tolerances that are carried out do not have to be too tight, and the work environment does not have to be controlled so tightly, it can use more affordable or cheaper materials so that it is cost-effective.

Determination and Selection of Orthogonal Array

In determining the type of OA, two things must be considered, namely:
1. The number of levels and factors to be studied.
2. Interaction in factors.

RESEARCH METHOD

Taguchi method uses a special set of matrices called Orthogonal Arrays, to determine which combination of factors and levels will be used in an efficient experiment and to analyze the experimental data. Orthogonal Array is a fractional factorial matrix that ensures a balanced comparison between the levels of factors or their interactions in the resulting combination. Orthogonal arrays are used to determine the minimum number of experiments that can provide as much information as possible on all factors that affect the parameters. The most important part of Orthogonal Array lies in the selection of the combination of levels of the input variables for each experiment (Ross, 1989).

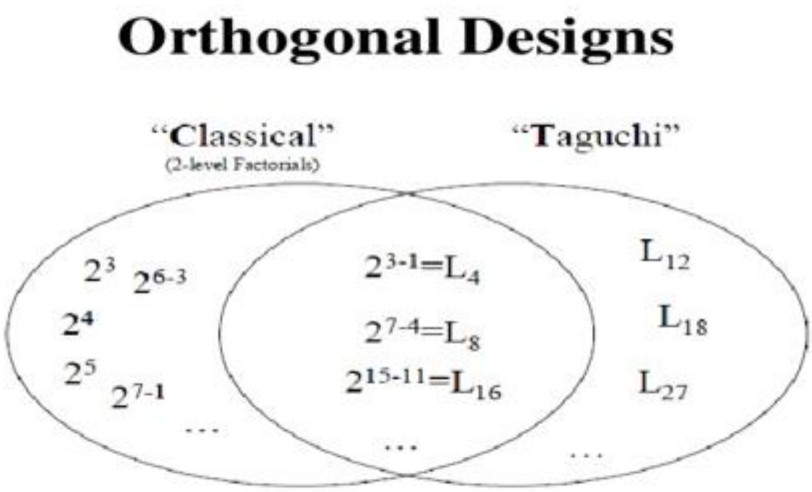


Figure 4. Orthogonal Designs

Orthogonal Array is a matrix of numbers arranged into a number of rows and columns. Each row represents the level of a factor in each experiment (run), and each column represents a particular factor or condition that can change from one experiment to another. The array is called orthogonal because each level of each factor is balanced and can be separated from the influence of other factors in the experiment. Orthogonal Array is a matrix of factors and levels that do not carry the influence of other factors or levels (Park, 1996).

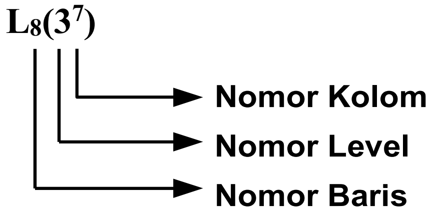


Image caption:

- L = information about the Orthogonal Array
- The number in the row indicates the number of trials needed when using the Orthogonal Array
- The column number is the number of factors observed in the Orthogonal Array
- The level number indicates the number of factor levels

Select a Taguchi Orthogonal Arrays Based on DOF

Orthogonal Array	No. Runs	Max. Factors	Max. of columns at these levels			
			2-level	3-level	4-level	5-level
L4	4	3	3			
L8	8	7	7			
L9	9	4		4		
L12	12	11	11			
L16	16	15	15			
L'16	16	5			5	
L18	18	8	1	7		
L25	25	6				6
L27	27	13		13		
L32	32	31	31			
L'32	32	10	1		9	
L36	36	23	11	12		
L'36	36	16	3	13		
L50	50	12	1			11
L54	54	26	1	25		
L64	64	63	63			
L'64	64	21			21	
L81	81	40		40		

Figure 5. Taguchi Orthogonal Arrays

For two levels, the OA table consists of L4, L8, L12, L16, L32, while for three levels the OA table consists of L9, L18, L27 (Taguchi, 2001).

The number of levels used in the factor is used to select the Orthogonal Array. If the factor is set to level two, then a two-level orthogonal array must be used, and so on. The Orthogonal Array for L4 is shown in the table.

The OA matrix in the table above consists of 3 control parameters (A, B, and C) with two levels (1 and 2). For this matrix, 4 trials are required because based on the Orthogonal Array matrix there are 4 types of combinations.

Experiment Number	Column 1	2	3
1	1	1	1
2	1	2	2
3	2	1	2
4	2	2	1

Figure 6. Orthogonal Matrix Array L4

The OA matrix in the table above consists of 3 control parameters (A, B, and C) with two levels (1 and 2). For this matrix, 4 trials are required because based on the Orthogonal Array matrix, there are 4 types of combinations.

RESULTS AND DISCUSSION

Determination and Selection of Orthogonal Array

Orthogonal Array itself can be classified into four types (Park, 1996). Determining the type of OA used can be done by choosing one of the four types of OA that best suits the number of factors and levels studied and also their interactions. The four types of OA are as follows:

1. Orthogonal Array

Standard The standard OA table consists of four types, namely for 2 levels, 3 levels, 4 levels, and 5 levels. For two levels, the OA table consists of L_4 (2^3), L_8 (2^7), L_{16} (2^{15}), L_{32} (2^{31}), and L_{64} (2^{63}), while for three levels the OA table consists of L_9 (3^4), L_{27} (2^{13}), L_{81} (2^{40}). For 4 levels, the OA table is for example L_{64} (4^{21}), and for 5 levels, the example is L_{25} (5^6).

Experiment Number	Column 1	2	3	4	5	6	7
1	1	1	1	1	1	1	1
2	1	1	1	2	2	2	2
3	1	2	2	1	1	2	2
4	1	2	2	2	2	1	1
5	2	1	2	1	2	1	2
6	2	1	2	2	1	2	1
7	2	2	1	1	2	2	1
8	2	2	1	2	1	1	2

Figure 7. Orthogonal Array L8

2. Extended Orthogonal Array or Partially Orthogonal Array

When there are too many factors to be placed, and interactions can be ignored, the standard OA table can be extended to increase the number of columns to accommodate more factors. Examples are $L_{12}(2^{11})$, and $L_{27}(3^{22})$.

3. *Mixed Orthogonal Array*

This type of OA table contains two different types of levels. This OA is used when there are many factors with different levels, and interactions can be ignored. Examples are $L_{18}(2^1 \text{ x } 3^7)$, $L_{32}(2^1 \text{ x } 4^9)$, $L_{36}(2^{11} \text{ x } 3^{12})$, $L_{36}(2^3 \text{ x } 3^{13})$, $L_{50}(2^1 \text{ x } 5^{11})$, and $L_{54}(2^1 \text{ x } 3^{25})$.

4. *Column-Merged Orthogonal Array*

This OA table is formed from the standard OA table using the column-merged method. Examples are $L_8(4^1 \text{ x } 2^4)$, $L_{16}(4^1 \text{ x } 2^{12})$, $L_{16}(4^2 \text{ x } 2^9)$, $L_{16}(4^4 \text{ x } 2^3)$, $L_{16}(4^5)$, and $L_{16}(8^1 \text{ x } 2^8)$.

NOMENCLATURE OF ARRAYS

$L_a(b^c)$

L - Latin square
a - no of rows
b - no of levels
c - no of columns (Factors)
Degrees of freedom- a-1

2-level series	3 -level series	4 -level series	Mixed -level
$L_4(2^3)$	$L_9(3^4)$	$L_{15}(4^5)$	*$L_{18}(2^1,3^7)$
$L_8(2^7)$	$L_{27}(3^{13})$	$L_{64}(4^{21})$	$L_{36}(2^{11},3^{12})$
**$L_{12}(2^{11})$	$L_{81}(3^{40})$	-	or
$L_{16}(2^{15})$	-	-	$L_{36}(2^3,3^{13})$
$L_{32}(2^{31})$	-	-	-

*Interactions cannot be studied

**Can study 1 interaction between the 2-level factor and one 3-level factor

Figure 8. Nomenclature of Arrays

Taguchi matrix is mathematically identical to Hardmard matrix, only the columns and rows are arranged again. The advantage of Orthogonal Array is its ability to evaluate several factors with a minimum number of trials. If in the experiment there are 7 factors with level 2, then using full factorial will require 27 trials. With Orthogonal Array, the number of trials that need to be done can be reduced so that it will reduce the time and cost of the experiment. Orthogonal Array Taguchi method has provided various OA matrices for testing factors with 2 and 3 levels with the possibility of multiple level testing (Ross, 1989).

- Taguchi telah menyusun OA standar

Common Orthogonal Arrays

$L_4(2^3)$, $L_8(2^7)$, $L_{12}(2^{11})$, $L_{16}(2^{15})$, $L_{32}(2^{31})$, .. ==> (2-level arrays)

$L_9(3^4)$, $L_{18}(2^1\ 3^7)$, $L_{27}(3^{13})$ . . ==> (3-level arrays)

$L_{16}(4^5)$, $L_{32}(2^1\ 4^9)$, .. ==> (4-level arrays)

Note: Arrays $L_{18}(2^1\ 3^7)$, $L_{32}(2^1\ 4^9)$, and $L_{54}(2^1\ 3^{25})$ are for mixed level factors.

Figure 9. Common Orthogonal Arrays

All Combinations for Three Variables of Three Levels Each

	A	B	C
1	Red	Red	Red
2	Red	Red	Green
3	Red	Red	Blue
4	Red	Green	Red
5	Red	Green	Green
6	Red	Green	Blue
7	Red	Blue	Red
8	Red	Blue	Green
9	Red	Blue	Blue
10	Blue	Red	Red
11	Blue	Red	Green
12	Blue	Red	Blue
13	Blue	Green	Red
14	Blue	Green	Green
15	Blue	Green	Blue
16	Blue	Blue	Red
17	Blue	Blue	Green
18	Blue	Blue	Blue
19	Green	Red	Red
20	Green	Red	Green
21	Green	Red	Blue
22	Green	Green	Red
23	Green	Green	Green
24	Green	Green	Blue
25	Green	Blue	Red
26	Green	Blue	Green
27	Green	Blue	Blue

Orthogonal matrix is a fractional factorial matrix that ensures a balanced comparison of levels in each factor or interaction of factors (Park, 1996). This matrix is used to specify samples from groups. The matrix allows us to determine the specification group during the sample production. Determination of the Orthogonal Array matrix is based on the number of factors and levels used for the study.

All-Pairs Array, Three Variables of Three Levels Each			
	A	B	C
2	Red	Red	Green
4	Red	Green	Red
9	Red	Blue	Blue
12	Blue	Red	Blue
14	Blue	Green	Green
16	Blue	Blue	Red
19	Green	Red	Red
24	Green	Green	Blue
26	Green	Blue	Green

Simple Example of Using Orthogonal Array

The example given here will be very easy to understand because it is related to daily business activities, namely when you want to sell ice cream and are conducting research on how to make delicious, soft ice cream at a low cost, so that later our products will be liked by our customers. After considering it, it turns out that the suggestions after consulting with culinary experts, it turns out that the following ingredients are needed:

1. 2 cans of white sweetened condensed milk
2. 4 cans of liquid milk
3. 2 tablespoons of cornstarch
4. 2 egg whites
5. 2 tablespoons of granulated sugar
6. 1 teaspoon of vanilla

However, after practicing, it turns out that the results obtained are not very tasty and not satisfying. Because we want to be serious in this ice cream sales business, so the entrepreneur-engineer soul wants to try how to find delicious ice cream. The only way is to experiment with a combination of ingredients and the process of making ice cream to make it tastier, not only tastier but still at a low cost. Then an experiment was conducted with a combination test as follows:

1. White sweetened condensed milk: 1 can, 2 cans and 3 cans
2. Liquid Milk: 2, cans, 4 cans and 6 cans
3. Cornstarch: 1 tbsp, 2 tbsp and 3 tbsp
4. Egg White: 1, 2, 3
5. Granulated Sugar: 2 tbsp, 4 tbsp
6. Vanilla: 1 tsp, 2 tsp

The research to design a combination of various choices is a research in the field of Design of Experiments (DoE). Where in the example above, there are 6 factors, namely (1) white sweetened condensed milk, (2) liquid milk, (3) cornstarch, (4) egg white, (5) granulated sugar and (6) vanilla. While each factor has at least 2 levels (choices). Sweetened condensed milk has 3 levels, namely 1, 2 and 3 cans. Liquid milk has 3 levels, cornstarch has 3 levels, egg white has 3 levels, granulated sugar has 2 levels and vanilla has 2 levels.

If we refer to the 'full factorial design', then we will have the number of combinations: 3 x 3 x 3 x 3 x 2 x 2 = 324 combinations. If we think the number 324 is too much, we can take only 1/3 or 1/2 of it. This method is known as 'fractional factorial design'. Of course, after designing the experiment and executing it, data processing and analysis need to refer to the DoE rules.

However, because the combination of experiments and research kits requires large capital, it cannot accommodate that many experiments. Maybe at most we can only try 20 experiments. This is where the concept of 'orthogonal array' (OA) and 'optimal design' (OD) are used. Because OA has unique characteristics and is very useful in designing experiments. OA requires that the combination of levels of several factors must appear in the same amount. If this is not possible, then you can switch to NOA (nearly orthogonal array) and optimal design. These two terms are similar. That is, to aim to imitate 'OA'.

Back to the ice cream example, it turns out that the ice cream problem can be solved with (N)OA. To use it, we need to follow these steps:

1. Enter data on the number of factors, the number of runs (experiments) and the number of iterations in the 'General_Data' worksheet
2. Enter the number of levels and variables to be tested in the 'Variable_Data' worksheet
3. Run the algorithm by clicking 'RUN ALGORITHM' in the 'General_Data' worksheet.

After waiting for about 1.5 minutes, the ice cream making experiment with 18 runs was obtained:

	Factor_1	Factor_2	Factor_3	Factor_4	Factor_5	Factor_6
Run_1	1	1	0	1	-1	-1
Run_2	-1	-1	1	-1	-1	1
Run_3	-1	0	0	0	1	-1
Run_4	0	0	-1	1	-1	1
Run_5	1	1	1	-1	1	-1
Run_6	0	1	0	0	-1	1
Run_7	1	-1	-1	1	-1	-1
Run_8	1	0	0	-1	1	1
Run_9	0	-1	1	0	1	-1
Run_10	-1	1	1	1	1	1
Run_11	-1	0	-1	-1	-1	-1
Run_12	1	0	1	0	-1	1
Run_13	0	0	1	1	1	-1
Run_14	0	1	-1	-1	1	1
Run_15	-1	1	-1	0	-1	-1
Run_16	-1	-1	0	1	1	1
Run_17	0	-1	0	-1	-1	-1
Run_18	1	-1	-1	0	1	1

If we translate the experimental design table with the ice cream example above, then we need to carry out the following experiment:

No	Susu kental	Susu cair	Maizena	Putih telur	Gula	Vanili
Run_1	3 kaleng	6 kaleng	2 sdm	3 butir	2 sdm	1 sdt
Run_2	1 kaleng	2 kaleng	3 sdm	1 butir	2 sdm	2 sdt
Run_3	1 kaleng	4 kaleng	2 sdm	2 butir	4 sdm	1 sdt
Run_4	2 kaleng	4 kaleng	1 sdm	3 butir	2 sdm	2 sdt
Run_5	3 kaleng	6 kaleng	3 sdm	1 butir	4 sdm	1 sdt
Run_6	2 kaleng	6 kaleng	2 sdm	2 butir	2 sdm	2 sdt
Run_7	3 kaleng	2 kaleng	1 sdm	3 butir	2 sdm	1 sdt
Run_8	3 kaleng	4 kaleng	2 sdm	1 butir	4 sdm	2 sdt
Run_9	2 kaleng	2 kaleng	3 sdm	2 butir	4 sdm	1 sdt
Run_10	1 kaleng	6 kaleng	3 sdm	3 butir	4 sdm	2 sdt
Run_11	1 kaleng	4 kaleng	1 sdm	1 butir	2 sdm	1 sdt
Run_12	3 kaleng	4 kaleng	3 sdm	2 butir	2 sdm	2 sdt
Run_13	2 kaleng	4 kaleng	3 sdm	3 butir	4 sdm	1 sdt
Run_14	2 kaleng	6 kaleng	1 sdm	1 butir	4 sdm	2 sdt
Run_15	1 kaleng	6 kaleng	1 sdm	2 butir	2 sdm	1 sdt
Run_16	1 kaleng	2 kaleng	2 sdm	3 butir	4 sdm	2 sdt
Run_17	2 kaleng	2 kaleng	2 sdm	1 butir	2 sdm	1 sdt
Run_18	3 kaleng	2 kaleng	1 sdm	2 butir	4 sdm	2 sdt

The table above is very interesting. It is clearer if we sort it based on the factors of condensed milk and liquid milk as in the table below. Note that the combination of condensed milk and liquid milk each appears exactly twice. This property can also be observed if we sort it based on other factors.

No	Susu kental	Susu cair	Maizena	Putih telur	Gula	Vanili
Run_16	1 kaleng	2 kaleng	2 sdm	3 butir	4 sdm	2 sdt
Run_2	1 kaleng	2 kaleng	3 sdm	1 butir	2 sdm	2 sdt
Run_11	1 kaleng	4 kaleng	1 sdm	1 butir	2 sdm	1 sdt
Run_3	1 kaleng	4 kaleng	2 sdm	2 butir	4 sdm	1 sdt
Run_15	1 kaleng	6 kaleng	1 sdm	2 butir	2 sdm	1 sdt
Run_10	1 kaleng	6 kaleng	3 sdm	3 butir	4 sdm	2 sdt
Run_17	2 kaleng	2 kaleng	2 sdm	1 butir	2 sdm	1 sdt
Run_9	2 kaleng	2 kaleng	3 sdm	2 butir	4 sdm	1 sdt
Run_4	2 kaleng	4 kaleng	1 sdm	3 butir	2 sdm	2 sdt
Run_13	2 kaleng	4 kaleng	3 sdm	3 butir	4 sdm	1 sdt
Run_14	2 kaleng	6 kaleng	1 sdm	1 butir	4 sdm	2 sdt
Run_6	2 kaleng	6 kaleng	2 sdm	2 butir	2 sdm	2 sdt
Run_7	3 kaleng	2 kaleng	1 sdm	3 butir	2 sdm	1 sdt
Run_18	3 kaleng	2 kaleng	1 sdm	2 butir	4 sdm	2 sdt
Run_8	3 kaleng	4 kaleng	2 sdm	1 butir	4 sdm	2 sdt
Run_12	3 kaleng	4 kaleng	3 sdm	2 butir	2 sdm	2 sdt
Run_1	3 kaleng	6 kaleng	2 sdm	3 butir	2 sdm	1 sdt
Run_5	3 kaleng	6 kaleng	3 sdm	1 butir	4 sdm	1 sdt

The OA template is built using iterations to find good solutions. Iterations can be viewed as a measure of the computational effort expended to obtain OA. So the larger the iteration, the longer the computation time and the better the iteration results (usually). The number of runs is 18 because of constraints, such as budget constraints, material and others. In addition, the number of runs must be greater than the number of variables to be analyzed, for example analyzed in linear regression. The number is also attempted as a multiple of the number of levels of the factors so that the number of experiments is balanced.

Discussion of The Review of the Research Journal Titled Orthogonal Array Testing Strategy (OATS) Technique in the Field of Marketing

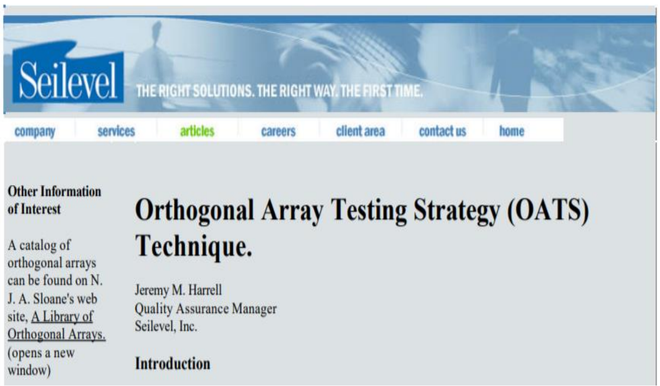


Figure 10. Seilevel Journal

This journal discusses research that wants to be done to see how to create a website page to promote a product, both goods and services. Where this research wants to see how user interaction on the website. So, it is made in the following system:

1. There are three independent variables (page sections).
2. Each variable can take two values (hidden or visible).
3. The orthogonal array L_4 (2^3) will do the trick - two levels for values and three factors for variables. Note that the number of processes is not necessary to select the appropriate array.
4. Mapping values to arrays will look like Figure 2 where Hidden = 0 and Visible = 1.

Figure 2

OA before mapping factors

	Factor 1	Factor 2	Factor 3
Run 1	0	0	0
Run 2	0	1	1
Run 3	1	0	1
Run 4	1	1	0

OA after mapping factors

	Top	Middle	Bottom
Test 1	Hidden	Hidden	Hidden
Test 2	Hidden	Visible	Visible
Test 3	Visible	Hidden	Visible
Test 4	Visible	Visible	Hidden

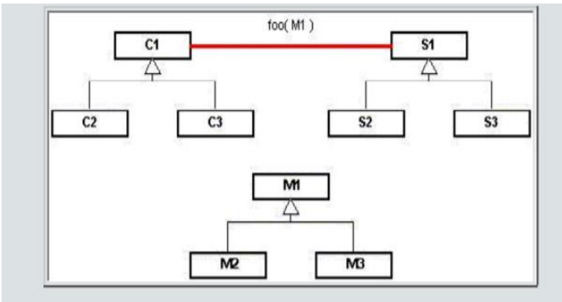
5. Take the test case values from each run, with four test cases. That is all it takes to test all pair-wise interactions between the three variables.

A. Show the website homepage and hide all sections.
B. Show the website homepage and show all but the Top section.
C. Show the website homepage and show all but the Middle section.
D. Show the website homepage and show all but the Bottom section.

Note that not all possible combinations are tested. It takes eight test cases to test all combinations.

An Example That Doesn't Fit with Orthogonal Arrays

Let's look at an example that doesn't fit with the available arrays. This example considers an object-oriented system that contains a client class (C1) with two subclasses (C2 and C3). These client classes interact with a server class hierarchy consisting of a class S1 with subclasses S2 and S3. The server class contains a method foo () that takes an instance of class M1 as a parameter. M1 has two subclasses, M2 and M3. Figure below illustrates the classes involved.



To test all combinations of classes involved, we need 27 test cases (three clients that can each send three messages to three servers - 3 x 3 x 3 = 27). That doesn't seem like much, but it assumes that the foo () method can be tested with just one test case. In most cases, many test cases are needed to test a particular method. Also, these interactions may be a very small part of the overall system being tested. Using OATS techniques can significantly reduce the number of test cases.

1. There are three independent variables (client, server, and message class).
2. Each variable can take three values.
3. Ideally, we would use an array that contains three levels and three factors (an L? (3^3) OA). However, there is no such array published. Therefore, we need to find the smallest array

that will handle our problem. The orthogonal $L_9(3^4)$ will work. It has three levels for the values and four factors which is more than enough for three variables.

4. Mapping the values to the array will look like Figure 4 where:
1. For Client, C1 = 0; C2 = 1; C3 = 2.
2. For Server, S1 = 0; S2 = 1; S3 = 2.
3. For Message, M1 = 0; M2 = 1; M3 = 2.

Figure 4

OA before mapping factors

	Factor 1	Factor 2	Factor 3	Factor 4
Run 1	0	0	0	0
Run 2	0	1	1	2
Run 3	0	2	2	1
Run 4	1	0	1	1
Run 5	1	1	2	0
Run 6	1	2	0	2
Run 7	2	0	2	2
Run 8	2	1	0	1
Run 9	2	2	1	0

OA after mapping factors

	Client	Server	Message	
Test 1	C1	S1	M1	
Test 2	C1	S2	M2	
Test 3	C1	S3	M3	
Test 4	C2	S1	M2	
Test 5	C2	S2	M3	
Test 6	C2	S3	M1	
Test 7	C3	S1	M3	
Test 8	C3	S2	M1	
Test 9	C3	S3	M2	

5. There are no “leftover” Levels. However, it appears that there is an additional Factor in the original array. This Factor can be simply ignored; it does not change the properties of the test set generated from the array. You still get an even distribution of pairwise combinations.
6. Taking the test case values from each run, you end up with nine test cases. As mentioned earlier, these nine combinations can map to a larger set of test cases that must be executed against each of the nine combinations.

Here is a more complex example that introduces the concept of mixed-level orthogonal arrays. Let's say we have a system with 5 independent variables (A, B, C, D, and E). Variables A and B each have two possible values (A1-2 and B1-2). Variables C and D each have three possible values (C1-3 and D1-3). Variable E has six possible values (E1-6). To test all possible combinations, a test set containing 216 test cases is required (2 x 2 x 3 x 3 x 6 = 216). There are five independent variables.

1. Two variables can take on two values. Two variables can take on three values. One variable can take on six values.
2. The easiest way to find a suitable OA is to go into your array catalog and look for an array that has at least six levels (the maximum levels for any of our variables) and at least five factors. The smallest orthogonal array with a consistent number of levels that you will probably find is $L_{49}(7^8)$ OA. This array will produce a test set of 49 tests. That is much better than 216, but it is still a lot of tests.
3. You may have noticed the phrase "consistent number of levels" in the previous paragraph. This is important because there happen to be some orthogonal arrays that have varying numbers of levels. One such array is $L_{18}(3^6 6^1)$ OA. The naming of this array means that there are 18 runs for 7 factors, 6 of which contain 3 levels and 1 of which contains 6 levels. Our problem happens to fit this array, and the test set goes from 49 with the first array we identified down to 18. Now that is much better than 216 tests!

4. Mapping the values to the arrays would look something like Figure 5 where:
1. For A, A1 = 0; A2 = 1.
2. For B, B1 = 0; B2 = 1.
3. For C, C1 = 0; C2 = 1; C3 = 2.
4. For D, D1 = 0; D2 = 1; D3 = 2.
5. For E, E1 = 0; E2 = 1; E3 = 2; E4 = 3; E5 = 4; E6 = 5.

Figure 5

OA before mapping factors

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Run 1	0	0	0	0	0	0	0
Run 2	0	1	2	2	0	1	1
Run 3	0	2	1	2	1	0	2
Run 4	0	1	1	0	2	2	3
Run 5	0	2	0	1	2	1	4
Run 6	0	0	2	1	1	2	5
Run 7	1	1	1	1	1	1	0
Run 8	1	2	0	0	1	2	1
Run 9	1	0	2	0	2	1	2
Run 10	1	2	2	1	0	0	3
Run 11	1	0	1	2	0	2	4
Run 12	1	1	0	2	2	0	5
Run 13	2	2	2	2	2	2	0
Run 14	2	0	1	1	2	0	1
Run 15	2	1	0	1	0	2	2
Run 16	2	0	0	2	1	1	3
Run 17	2	1	2	0	1	0	4
Run 18	2	2	1	0	0	1	5

OA after mapping factors

	A	B	C	D			E
Test 1	A_1	B_1	C_1	D_1			E_1
Test 2	A_1	B_2	C_3	D_3			E_2
Test 3	A_1	2	C_2	D_3			E_3
Test 4	A_1	B_2	C_2	D_1			E_4
Test 5	A_1	2	C_1	D_2			E_5
Test 6	A_1	B_1	C_3	D_2			E_6
Test 7	A_2	B_2	C_2	D_2			E_1
Test 8	A_2	2	C_1	D_1			E_2
Test 9	A_2	B_1	C_3	D_1			E_3
Test 10	A_2	2	C_3	D_2			E_4
Test 11	A_2	B_1	C_2	D_3			E_5
Test 12	A_2	B_2	C_1	D_3			E_6
Test 13	2	2	C_3	D_3			E_1
Test 14	2	B_1	C_2	D_2			E_2
Test 15	2	B_2	C_1	D_2			E_3
Test 16	2	B_1	C_1	D_3			E_4
Test 17	2	B_2	C_3	D_1			E_5
Test 18	2	2	C_2	D_1			E_6

6. Like the previous example, this array has additional factors that are not needed. They can be safely ignored and are grayed out in Figure 5. This orthogonal array has "leftover" levels. Variables A and B both have three levels defined in the original array, but there are only two possible values for each variable.

In order to have a fully specified test case to run that has left a level, one must provide a value in the cell. The choice of value is generally arbitrary, but it usually makes sense to add as much variation to the test case as possible to allow for the desired chance of helping to find the error (Marick, 1995).

Figure 6: OA after mapping left over levels

	A	B	C	D			E
Test 1	A_1	B_1	C_1	D_1			E_1
Test 2	A_1	B_2	C_3	D_3			E_2
Test 3	A_1	B_1	C_2	D_3			E_3
Test 4	A_1	B_2	C_2	D_1			E_4
Test 5	A_1	B_2	C_1	D_2			E_5
Test 6	A_1	B_1	C_3	D_2			E_6
Test 7	A_2	B_2	C_2	D_2			E_1
Test 8	A_2	B_1	C_1	D_1			E_2
Test 9	A_2	B_1	C_3	D_1			E_3
Test 10	A_2	B_2	C_3	D_2			E_4
Test 11	A_2	B_1	C_2	D_3			E_5
Test 12	A_2	B_2	C_1	D_3			E_6
Test 13	A_1	B_1	C_3	D_3			E_1
Test 14	A_2	B_1	C_2	D_2			E_2
Test 15	A_1	B_2	C_1	D_2			E_3
Test 16	A_2	B_1	C_1	D_3			E_4
Test 17	A_1	B_2	C_3	D_1			E_5
Test 18	A_2	B_2	C_2	D_1			E_6

7. As mentioned earlier, you end up with 18 test sets out of 216 possible. These 18 test sets will test all possible combinations of pairs of independent variables. This represents a significant saving in testing effort over the all-combination approach, and with this model in place, it will be able to point out tests that should not be done and will find most of the defects in the interactions.

Criticism on the Journal

1. In this reviewed journal, the results and further calculations of the experimental design are not presented in detail.
2. This study does not provide information on the results of the industry or published research regarding its costs.
3. There is no information on the effectiveness of using this technique for testing that has been carried out, while in the orthogonal array the aim is to inform about effectiveness.
4. Further research is expected to highlight the need for empirical research like this, so that the OATS technique itself can be continued properly and compared with other experimental design techniques.

CONCLUSION

It has been stated previously that for research conducting experimental design in the field of marketing is very rare to find and this is also experienced by the author in carrying out this task. And the discussion of the orthogonal array method attracts the author's attention because it is not a common thing to do in the field of marketing so that it increases the desire to be able to study it more seriously.

Orthogonal arrays are used to design efficient experiments and analyze experimental data by using only part of the total conditions so that in this case minimizing the number of experiments, where the number of experiments will be able to provide as much information as possible about the influencing factors. In this discussion, it will also be discussed how to use

Orthogonal Array in research on industrial products.

The use of experimental design that continues to develop will later be very useful in the field of marketing to see how a product is desired by consumers and can make the resulting product better and can save costs so that the use of this experimental design research can be used in decision making for the use of a product of goods and services

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PENGARUH *SOCIAL PERCEPTION, SOCIAL CULTURAL ENVIRONMENT, ENTREPRENEUR ORIENTATION* TERHADAP MINAT BERWIRAUSAHA MAHASISWA DI INDONESIA

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ABSTRACT

This study aims to determine the effect of social perception, socio-cultural environment, entrepreneurial orientation on female students' entrepreneurial interest in Indonesia. This study uses a quantitative method with data collection methods, namely by using an online questionnaire created via Google Form and distributed to online messengers (LINE, WhatsApp, and Telegram). The technique used to determine the sample in this study was using consecutive sampling with a total of 250 respondents. The results of the hypothesis test show that all hypotheses are supported, namely that there is a positive influence from the Socio-Cultural Environment which has a positive effect on Female Student Entrepreneurship Orientation, Social Perception has a positive effect on Female Student Entrepreneurship Orientation, Entrepreneurship Orientation has a positive effect on Female Student Entrepreneurial Intentions, Socio-Cultural Environment has an effect positive effect on Female Student Entrepreneurial Intentions, Social Perception has a positive effect on Female Student Entrepreneurial Intentions, Entrepreneurial Orientation mediates the influence of Socio-Cultural Environment on Female Student Entrepreneurial Intentions, Entrepreneurial Orientation mediates the influence of Social Perception on Female Student Entrepreneurial Intentions.

***Keywords**: Social Perception; Social Cultural Environment; Entrepreneur Orientation; Entrepreneur Intention*

ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh dari Pengaruh *Social Perception, Social Cultural Environment, Entreprenuer Orientation* Terhadap Minat Berwirausaha Mahasiswi di Indonesia. Penelitian ini menggunakan metode kuantitatif dengan metode pengumpulan data yaitu dengan menggunakan kuisioner *online* yang dibuat melalui *google form* dan disebarkan ke *onlinemessenger* (*LINE, WhatsApp,* dan *Telegram*). Teknik yang digunakan untuk menentukan sampel dalam penelitian ini adalah menggunakan *consecutive sampling* dengan jumlah responden sebanyak 250 responden. Hasil uji hipotesis menunjukkan hasil bahwa seluruh hipotesis didukung, yaitu terdapat pengaruh positif dari *socio-cultural environment* berpengaruh positif terhadap *entrepreneurial orientation* Mahasiswi Wanita, *social perception* berpengaruh positif terhadap *entrepreneurial orientation* Mahasiswi Wanita, *entrepreneruial orientation* berpengaruh positif terhadap *entrepreneurial ıntention* Mahasiswi Wanita, *socio-cultural environment* berpengaruh positif terhadap *entrepreneurialıntention* Mahasiswi Wanita, *social perception* berpengaruh positif terhadap *entrepreneurial ıntention* Mahasiswi Wanita, *entrepreneurial orientation* memediasi pengaruh *social-culture environment* terhadap *entrepreneurial ıntention* Mahasiswi Wanita, *entrepreneurial orientation* memediasi pengaruh *social perception* terhadap *entrepreneurial ıntention* Mahasiswi Wanita.

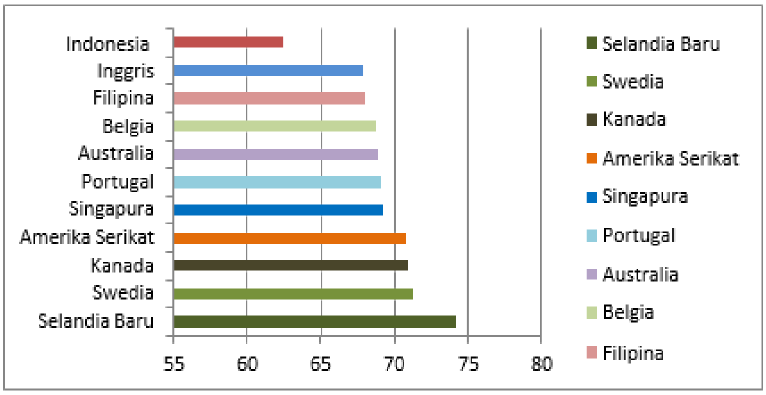
Kata Kunci: Persepsi Sosial; Lingkungan Sosial Budaya; Orientasi Wirausaha; Niat Pengusaha

PENDAHULUAN

Kewirausahaan secara luas dimaknai sebagai kemampuan untuk mengekspresikan kreativitas dan inovasi, digunakan sebagai tip, basis, modal dan prosedur, dan peperangan untuk melahirkan kualitas barang dan jasa yang dicapai melalui pengambilan risiko. Jadi pengetahuan kewirausahaan adalah pengetahuan terkait semua macam berita yang diolah dan kemudian diolah dalam domain intelektual berupa ingatan dan pemahaman tentang cara berbisnis dengan cara yang mendorong terjadinya resiko secara rasional dan logis (Elistia *et al.*, 2020). Pada dasarnya, wirausaha tidak terdiskriminasi antara wanita ataupun laki-laki. Namun, padapraktiknya di lapangan, terdapat perbedaan mencolok antara kewirausahaan wanita dan pria.

Di Indonesia dari sekian banyak pelaku bisnis atau wirausaha yang berwirausaha di Indonesia 59,2 jutanya merupakan pelaku UMKM. kontribusi UMKM in lah yang membuat pendapatan nasional bisa menyentuh 61,1 persen dan jika kita kerucutkan kembali dari jumlah pekalu UMKM tersebut lebih dari 37jutanya pelaku UMKM ialah wanita, Menurut Bank Indonesia lebih dari 60% pelaku UMKM di Indonesia adalah wanita namun , peran UMKM yang dikelola wanita hanya memberikan 9,1% terhadapa PDB , hal ini membuktikan bahwa adanya masalah pada kewiraushaaan wanita di Indonesia Hal ini bisa terjadi karena pemilik bisnis ini tidak memiliki dukungan-dukungan dan tidak memiliki minat untuk berwirausaha, melainkan hanya sebuah paksaan, atau status saja (Sirclo, 2021).

Selain itu, walaupun di Indonesia, perempuan memiliki persentase tinggi dalam berwirausaha, namun secara global, pelaku bisnis wanita di Indonesia masih terbilang sangat rendah dibandingkan dengan jumlah populasi masyarakat Indonesia yang sangat tinggi. Berikut merupakan pengamatan bukti:



Gambar 1. Indeks Pengusaha Perempuan di Sejumlah Negara. .
Sumber: KataData (2018)

Dari data di atas, terlihat bahwa memang indeks pengusaha wanita di Indonesia masih sangat rendah dan penduduk Indonesia menempati penduduk terbanyak ke-4 di dunia, padahal keseteraan gender di Indonesia masuk dalam 10 besar di dunia sebagai berikut:

Tabel 1. Kesetaraan Gender Global

Peringkat Asia	PeringkatDunia	Skor (ekonomi)	Skor (pendidikan)	Skor (kesehatan)	Skor (Politik)
1. Filipina	10	0.764	1	0.979	0.416
2. Bangladesh	47	0.465	0.954	0.966	0.493
3. Mongolia	53	0.776	0.993	0.980	0.102

4. Laos	64	0.769	0.993	0.974	0.137
5. Singapura	65	0.752	0.977	0.971	0.110
6. Vietnam	69	0.738	0.972	0.957	0.124
7. Thailand	75	0.767	0.958	0.978	0.072
8. Mynamar	83	0.754	0.975	0.976	0.059
9. Indonesia	84	0.610	0.986	0.976	0.193
10. Kamboja	99	0,698	0,921	0.980	0.104

Sumber: KataData (2018)

Dari data di atas, membuat adanya gap penelitian dimana dengan jumlah masyarakat yang banyak, dengan kesetaraan gender yang baik, namun ternyata peminat wirausaha di Indonesia berada jauh di bawah negara-negeri lain. Hal ini membuat adanya gap yang harus diteliti lebih lanjut. Penelitian ini dijalankan guna mengetahui faktor-faktor yang dapat meningkatkan minat mahasiswi akhir untuk menjadi wirausaha. Niat merupakan salah satu faktor kekuatan dari seorang individu wirausaha. Seseorang yang memanfaatkan kesempatan merupakan awal dari wirarusaha, peluang atau menjalankan suatu usaha dengan memanifestasikan prodak atau jasa baru. Berdasarkan Rasli *et al*. (2014) menyatakan bahwa niat berwirausaha adalah keinginan yang mendorong seseorang untuk menjalankan usaha. Niat berwirausaha mengacu padakesiapan yang ditunjukkan untuk terlibat dalam perilaku tertentu dalam hal ini berwirausaha.

Tujuan pokok penelitian ini yaitu untuk menganalisa: (1) Apakah *socio-cultural environment* berpengaruh terhadap *entrepreneurial orientation* mahasiswi? (2) Apakah *social perception* berpengaruh terhadap *entrepreneurial orientation* mahasiswi? (3) Apakah *entrepreneurial orientation* berpengaruh terhadap minatmahasiswi untuk menjadi wirausaha? (4) Apakah *socio-cultural environment* berpengaruh terhadap minatmahasiswi untuk menjadi wirausaha? (5) Apakah *social perception* berpengaruh terhadap minat mahasiswi untuk menjadi wirausaha? (6) Apakah *entrepreneurial orientation* memediasi pengaruh *socio-cultural environment* terhadap minat mahasiswi untuk menjadi wirausaha? dan (7) Apakah *entrepreneurial orientation* memediasi pengaruh *social perception* terhadap minat mahasiswi untuk menjadi wirausaha?. Kontribusi pada sisi praktis akan membantu pihak pendidikan dalam meningkatkan minat mahasiswi menjadi wirausaha. Selain itu, penelitian ini mendapatkan hasil yang dapaat dimanfaatkan pedoman untuk penelitian lanjutan yang juga meneliti mengenai kewirausahaan paska sarjana serta sebagai bahan referensi dalam bidang pendidikan terutama pada kewirausahaan.

TINJAUAN PUSTAKA

Socio-Cultural Environment Terhadap *Entrepreneurial Orientation*

Menurut Hofstede (2011), budaya adalah program pemikiran bersama yang memilah anggota dalam satu kelompok orang dari yang lain. Dengan demikian, lingkungan sosial budaya dapat mencerminkan kondisi suatu masyarakat, khususnya pengusaha perempuan, sebagai fokus penelitian ini. Menurut Hofstede (2011), dimensi budaya terdiri dari jarak otoritas, individualisme, maskulinitas, mendekati kepastian, dan ketekunan jangka panjang. Penelitian ini mengadopsi tiga dimensi Hofstede (2011) dalam mengukur lingkungan sosial budaya pengusaha perempuan yang terdiri dari individualisme, maskulinitas, dan penghindaran ketidakpastian. Peran gender sangat diperhatikan melalui sisi maskulin dan feminim, ketegasan, dan daya saing yang mengarah pada "maskulin" dan kesederhanaan dan nilai kepedulian terhadap "feminin". Sedangkan, penghindaran ketidakpastian terkait dengan toleransi masyarakat terhadap ketidakpastian dan ketidakjelasan, itu memperlihatkan sampai mana suatu organisasi dapat mengatur anggotanya dalam perihal kenyamanan. Abdullahi & Zainol (2016) menyatakan bahwa lingkungan sosial budaya yang terdiri dari pendidikan, agama, dan latar belakang keluarga berpengaruh positif terhadap orientasi kewirausahaan.

Dengan demikian, hipotesis penelitian ini:

Hipotesis 1: *Socio-cultural environment* berpengaruh positif terhadap *entrepreneurial orientation* mahasiswi wanita.

Social Perception Terhadap *Entrepreneurial Orientation*

Persepsi sosial ialah proses yang dilalui individu untuk memperlihatkan organisasi dan panndangan orang lain sebagai objek. Oleh karena itu, persepsi sosial ini lebih pada persepsi manusia berdasarkan pengalaman masa lalu dan pembelajaran yang berkaitan dengan orang, benda, atau peristiwa yang serupa. Persepsi sosial dalam konteks kewirausahaan merupakan proses seorang wirausahawan dalam menangkap makna objek sosial dan masalah sosial (manusia) dan lingkungan. Dengan persepsi sosial, setiap wirausahawan mencoba menentukan apa yang dipikirkan, diyakini, dirasakan, diinginkan, dan diinginkan konsumen. "Fungsi sosial membutuhkan kemampuan untuk mengenali keadaan emosi diri sendiri dan orang lain" (Permatasari *et al*., 2020). Persepsi sosial mempunyai pengaruh dalam pembentukan perempuan untuk menjadi wirausaha atau membuat bisnis dan tidak akan lepas dari unsur-unsur seperti konsep diri , sikap , nilai ,masa lalau , harapan, dan pengalaman. Orientasi nilai sosial cenderung melayani masyarakat dengan mengambil pendekatan kewirausahaan. Oleh karena itu, persepsi sosial juga mengacu pada bagaimana orang memahami dan mengkategorikan suatu upaya untuk memenuhi kebutuhan konsumennya.

Berdasarkan literatur, kami membangun hipotesis:

Hipotesis 2: *Socio perception* berpengaruh positif terhadap *entrepreneurial orientation* mahasiswi wanita.

Entrepreneurial Orientation Terhadap *Entrepreneurial İntention*

Orientasi kewirausahaan adalah karakter yang muncul dari seseorang untuk berinovasi, proaktif, dan mengambil risiko dalam menjalankan bisnis (Miller, 1983). Menurut Kreiser *et al*. (2010), pengenalan kewirausahaan berpusat pada proses, praktik, dan memberi ketetapan menuju arah baru. Selain peran orientasi kewirausahaan, ada banyak faktor yang memengaruhi niat berwirausaha. Jyoti (2011) menyatakan bahwa pengusaha wanita adalah salah satu populasi pengusaha yang tumbuh paling cepat. Lee & Lim (2008) berpendapat bahwa orientasi kewirausahaan pada wanita didasarkan pada empat dimensi, yaitu: kebutuhan untuk berprestasi, locus of control internal, kemandirian, dan ekstroversi. Dimensi orientasi kewirausahaan individu meliputi inovasi, pengambilan risiko, dan proaktif. Proaktif juga bisa dilihat menjadi sebuah keinginan seorang wirausaha untuk berusaha menjadi yang terbaik dan bisa berkompetisi dimulai dari pembuatan produk jasa dengan kreatif dan inovasi lalu memperkenalkan produk atau jasa tersebut ke target penjualan, semua tahap itulah akan lebih mudah digapai jika orientasi wirausahanya tepat dan kuat. Sedangkan memilih beresiko adalah bentuk posisi perusahaan untuk bisa memaksimalkan sumber daya dalam bisnis sebaik baiknya walaupun hasilnya tidak pasti atau tidak diketahui (Wiklund & Shepherd, 2003). Orientasi kewirausahaan memengaruhi niat kewirausahaan perempuan untuk menciptakan usaha baru.

Oleh karena itu, hipotesis terakhir dalam penelitian ini adalah:

Hipotesis 3: *Entrepreneurial orientation* berpengaruh positif terhadap *entrepreneurial intention* mahasiswi wanita.

Socio-Cultural Environment terhadap *Entrepreneurial Intention*

Menurut Koe (2016), budaya dan sosial dipengaruhi oleh variabel eksternal pada anteseden niat (norma subjektif, sikap pribadi, dan kontrol perilaku yang dirasakan) dan kekuatan relatif dari hubungan antara konstruksi kognitif ini. Koe (2016) mengembangkan instrumen untuk niat kewirausahaan untuk mengukur konstruksi kognitif yang relevan termasuk peran dimensi budaya dalam kognisi kewirausahaan. Persepsi lingkungan tentang nilai seorang wirausahawan berdampak pada pengembangan wirausaha (Kreiser & Davis, 2010). Salah satu tantangan kewirausahaan perempuan di negara berkembang adalah isu multikultural (Anggadwita *et al*., 2017). Faktor sosial budaya yang paling memengaruhi seorang wanita untuk menjadi seorang wirausahawan adalah ketakutan akan kegagalan, persepsi kemampuannya, persepsi peluang, dan panutan (Arenius & Minniti, 2005). Dampak sosial budaya pada niat kewirausahaan perempuan juga diamati oleh Mehtap *et al.* (2017), di mana sistem pendidikan tidak memadai dan membutuhkan lingkungan yang mendukung, tradisi konservatif tentu dapat menghambat. Hal ini berbeda dengan temuan yang mengungkap bahwa pendidikan kewirausahaan tidak efektif, dan faktor individu serta sosial budaya yang memengaruhi niat berwirausaha.

Hipotesis yang ditetapkan dalam penelitian ini adalah:
Hipotesis 4: *Socio-cultural environment* berpengaruh positif terhadap *entrepreneurial intention* mahasiswi wanita.

Social Perception Terhadap *Entrepreneurial Intention*

Persepsi sosial ialah suatu faktor yang memengaruhi niat berwirausaha wanita. Persepsi manusia bersifat selektif; ada faktor internal yang memengaruhi perhatian terhadap kewirausahaan. Dalam kewirausahaan sosial, pengusaha sengaja mengembangkan intervensi dengan berfokus pada keyakinan dan kognisi (Urban, 2020). Nilai-nilai pribadi memengaruhi penciptaan usaha sosial melalui pentingnya pengalaman pribadi, keinginan untuk membuat perubahan, dan kemauan untuk melakukan sesuatu yang berarti dalam hidup seseorang (Anggadwita & Palanic, 2020). Dengan demikian, persepsi sosial bersifat pribadi dan subjektif dan dipengaruhi oleh harapan. Persepsi sosial dapat secara langsung memengaruhi niat wirausaha perempuan. Secara alami, seorang wanita akan fokus pada objek yang dianggap perlu. Ketika pengusaha melihat peluang, stimulasi secara signifikan memengaruhi struktur kognitif, harapan dan juga secara langsung dipengaruhi oleh persepsi. Wanita lebih cenderung menerjemahkan keinginan positif menjadi niat kewirausahaan sosial (Dickel & Eckardt, 2021). Perempuan menjadi wirausaha karena faktor kemandirian: wanita berkeinginan untuk bekerja secara mandiri dengan membuka usaha tanpa bergantung pada orang lain. Neneh (2020) juga menyatakan bahwa dukungan sosial memengaruhi baik dan relevan terhadap niat berwirausaha. Oleh karena itu, literatur berikut mendukung hipotesis:
Hipotesis 5: *Social perception* berpengaruh positif terhadap *entrepreneurial intention* mahasiswi wanita.

Socio-Culture Environment Terhadap *Entrepreneurial Intention* Melalui *Enterpreneurial Orientation*

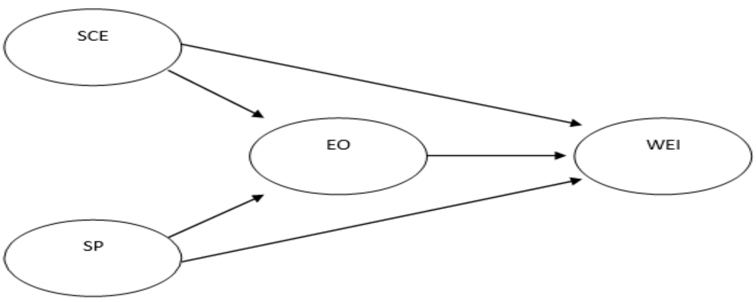
Berbagai dimensi nilai budaya berdampak pada niat berwirausaha melalui pengambilan risiko dan perilaku proaktif. Sikap menghadapi masalah ialah dengan memanfaatkan sumber daya internal dan eksternal dengan perubahan lingkungan. Dalam usaha kecil, peran sosial budaya memengaruhi organisasi untuk bertindak dan mengambil keputusan secara mandiri. Perpaduan pengetahuan diawali dengan pertukaran pengetahuan yang berdampak pada orientasi kewirausahaan. Tantangan lingkungan eksternal dan budaya organisasi akan memengaruhi organisasi untuk berkembang dan beradaptasi dengan perubahan. Kemajuan usaha perempuan dipengaruhi oleh orientasi kewirausahan dan pendapatan pengetahuan luar. Penelitian ini juga melihat faktor eksternal yang dapat berkontribusi untukmenciptakan bisnis perempuan yang berkelanjutan. Matlay *et al*. (2014) mengatakan bahwa budaya dan partisipasi secara signifikan meningkatkan niat berwirausaha. Oleh karena itu, lingkungan sosial budaya akan mengikat orientasi kewirausahaan untuk bersaing di pasar dan bertahan melawan pesaing. Dengan demikian, orientasi kewirausahaan yang dipengaruhi oleh iklim sosial budayakan berpengaruh secara relevan terhadap niat kewirausahaan perempuan.

Oleh karena itu hipotesis keenam dari penelitian ini adalah:
Hipotesis 6*: Entrepreneurial orientation* memediasi pengaruh s*ocio-culture environment* terhadap *entrepreneurial intention* mahasiswi wanita

Social Perception* Terhadap *Entrepreneurial Intention* Melalui *Enterpreneurial Orientation

Dalam konteks wirausaha sosial, persepsi sosial merupakan landasan utama untuk memacu orientasi kewirausahaan dan akan memengaruhi pengusaha untuk melihat permasalahan sosial dan motivasi untuk membantu dan memberikan solusi atas permasalahan sosial yang ada. Persepsi sosial memainkan peran penting dalam memaksimalkan pengenalan kewirausahaan dan niat kewirausahaan perempuan (Nasip *et al.,* 2017). Orientasi wirausaha pada perempuan diwujudkan dalam dua hal: efektivitas wirausahawan dalam pengelolaan usaha dan, kedua, terkait dengan *plan* bisnis terhadap sikap atau tanggapan di pasar. Dukungan sosial memengaruhi orientasi kewirausahaan dan kepuasan pengusaha perempuan (Jyoti, 2011). Orientasi kewirausahaan dan modal sosial mempunyai korelasidengan kinerja bisnis dan studi menunjukkan bahwa pengambilan risiko danmodal sosial berhubungan positif dengan kinerja bisnis pengusaha perempuan. Karena modal sosial memainkan peran penting bagi pengusaha perempuan, dan pengambilan risiko berkontribusi pada kinerja bisnis, orientasi kewirausahaan yang sudah terpengaruh oleh persepsi sosial, maka dari itu ada kemungkinan perusahaan akan meningkatkan kretivitas agar bisa memecahkan masalah social yang ada di dalam masyarakat, persepsi social pada akhirnya akan membentuk menjadi orientasi kewirausahaan agar perusahaan memiliki potensi memprediksikebutuhan sosial di dalam masyarakat lalu memanfaatkannya solusi ataspermasalahan tersebut.

Penjelasan yang diajukan tersebut membentuk hipotesis:
Hipotesis 7: *Entrepreneurial orientation* memediasi pengaruh *social perception* terhadap *entrepreneurial intention* mahasiswi Wanita



Gambar 2. Model Penelitian

METODE PENELITIAN

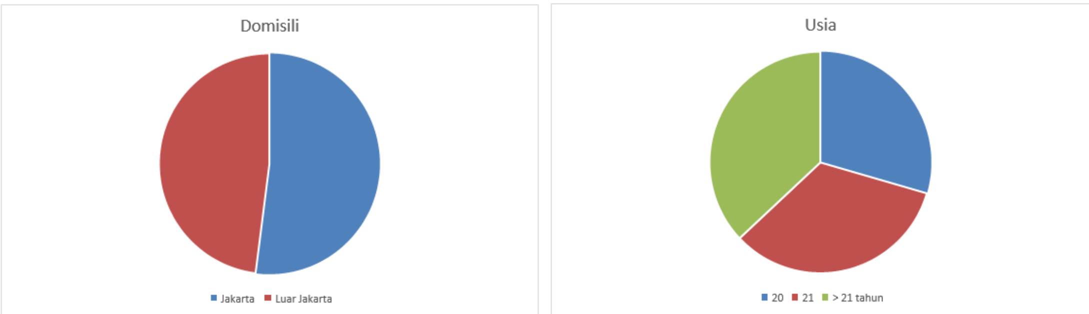
Tujuan dari penelitian ini yaitu memahami dari Pengaruh *Social Perception, Social Cultural Environment, Entreprenuer Orientation* Terhadap Minat Berwirausaha Mahasiswi di Indonesia. Variabel bebas dalam penelitian ini adalah *Social Perception, Social Cultural*

*Environment,*dan *Entreprenuer Orientation*. Variabel terikatnya adalah Minat Berwirausaha. Target populasi adalah mahasiswi di Jakarta yang sudah mengambil mata kuliah kewirausahaan dan sedang berada di tahun terakhir perkuliahan. Selanjutnya dilakukan perhitungan penentuan sampel dengan menggunakan rumus *cochran*. Berdasarkan kalkulasi tersebut, maka seluruh sampel minimal yang harus terrdapat dalam penelitian adalah 97 mahasiswi di Indonesia yang sudah mengambil mata kuliah kewirausahaan pada penelitian ini menggunakan 250 sampel.

Pengisian kuesioner dilakukan dalam serangkaian metode penelitian ini kepada sampel penelitian yaitu 97 mahasiswi di Indonesia. Item-item kuesioner yang digunakan untuk mengukur *social perception, social cultural environment, entreprenuer orientation* terhadap minat berwirausaha Mahasiswi. Pengukuran unit kuesioner menggunakan 5 poin skala *Likert* yakni 1= sangat tidak setuju, 2=tidak setuju, 3=netral, 4= setuju, dan 5= sangat setuju. Selanjutnya, instrumen diuji validitas dan reliabilitasnya dengan analisis statistik PLS-SEM pada tahap model pengukuran (*inner model*). Uji validitas dilakukan dengan pengukuran *average variance extraction* (AVE), *loading factor* dan *discriminant analysis*. Instrumen dapat mencukupi syarat validitas jika nilai AVE > 0.5, *loading factor* > 0.7 dan *discriminant analysis* harus memenuhi kriteria *Fornel-Larcker* yakni nilai akar kuadrat AVE harus lebih besar dari pada nilai korelasi antar variabel. Kemudian uji reliabilitas dengan menghitung nilai *composite reliability* yang harus lebih besar dari pada 0.7. Kemudian, data dianalisis dengan analisis statistik *partial least square-structural equation modeling* (PLS-SEM) yang dibantu dengan program SmartPls 3.0.

HASIL DAN PEMBAHASAN

Penelitian ini menggunakan responden yang berasal dari mahasiswi di Indonesia sedang atau telah memperoleh mata kuliah kewirausahaan sebanyak 250 orang, dari ke-250 orang tersebut didapatkan karakterisik secara umum mengenai responden penelitian, yaitu:



Gambar 3. Karakteristik responden berdasarkan (1). Domisili dan (2). Usia
Sumber : Hasil Pengolahan Data

Berdasarkan diagram tersebut, maka dapat dijelaskan bahwa 52% responden di dalam penelitian ini berdomisili di Jakarta, sedangkan 48% berdomisili di luar Jakarta, kesimpulannya mayoritas responden berdomisili di Jakarta. Sedangkan berdasarkan usia, sebanyak 28,5% responden didalampenelitian ini berusia 20 tahun, 40,5% berusia 21 tahun, dan 31% responden di dalam penelitian ini berusia di atas 21 tahun. Kesimpulannya mayoritas responden berusia 21 tahun.

Outer Model

Analisis *outer* model dilaksanakan dengan menaksir validitas dan reliabilitas dari data didapatkan melalui instrumen penelitian, adapun penilaian validitas terdiri dari validitas konvergen (*loading factor* dan AVE) serta validitas diskriminan (*fornell-larcker* dan *Cross Loading*), Sementara reliabilitas diukur dengan menggunakan *cronbach's alpha* dan *composite reliability.*

Tabel 1. Nilai *Loading Factor*

	EI	EO	SCE	SP
EI3	0,765			
EI4	0,800			
EI5	0,767			
EI7	0,768			
EO1		0,706		
EO10		0,769		
EO12		0,738		
EO13		0,733		
EO14		0,706		
EO2		0,734		
EO8		0,713		
EO9		0,760		
SCE3			0,724	
SCE4			0,777	
SCE5			0,779	
SCE7			0,756	
SP2				0,819
SP3				0,769
SP4				0,749

Sumber : Hasil Pengolahan Data

Pengujian *loading factor* menjelaskan bahwa nilai dari indikator sudah lebih besar dari 0,700 sehingga bisa diambil kesimpulan bahwa instrumen penelitian sudah memenuhi validitas konvergen berdasarkan pengujian *loading factor*. Tabel 2 berisi masing-masing nilai *Average Variance Extract* (AVE) variabel. Dapat dilihat bahwa seluruh niali lebih dari 0,5 sehingga dapat dikatakan memenuhi validitas konvergen.

Tabel 2. Nilai *Average Variance Extract* (AVE)

Variabel	AVE	Ketentuan	Keterangan
EI	0,601	> 0,500	Valid
EO	0,537		Valid
SCE	0,577		Valid
SP	0,608		Valid

Sumber : Hasil Pengolahan Data

Selanjutnya, tabel 3 menunjukkan hasil penaksiran nilai akar kuadrat AVE dan nilai hubungan antar konstruk. Pada tabel tersebut menjelaskan bahwa analisa diskriminan memenuhi kriteria *Fornel* dan *Larcker* yakni nilai akar kaudrat lebih besar dari pada nilai hubungan antar konstruk.

Tabel 3. Hasil Uji Validitas Diskriminan

	EI	EO	SCE	SP
EI	0,775			

EO	0,752	0,833		
SCE	0,750	0,833	0,860	
SP	0,766	0,815	0,775	0,880

Sumber: Hasil Pengolahan Data

Uji reliabilitas dilakukan dengan pengukuran nilai *cronbach's alpha* dan *composite reliability*. Konstruk dinyatakan mempunyai reliabilitas yang baik jika nilai *cronbach's alpha* dan *composite reliability* di atas 0.7. Hasil perhitungan *cronbach's alpha* dan *composite reliability* disajikan pada Tabel 4.

Tabel 4. Nilai *Cronbach's Alpha* dan *Composite Reliability*

Variabel	CA	CR	Ketentuan	Keterangan
EI	0,778	0,857	> 0.700	Reliabel
EO	0,877	0,903		Reliabel
SCE	0,755	0,845		Reliabel
SP	0,777	0,823		Reliabel

Sumber: Hasil Pengolahan Data

Inner Model

Model analisis *inner* yang dipakai dalam penelitian ini ialah dengan pengujian koefisien determinasi atau *R Square* dan pengujian hipotesis yang menggunakan *path coefficient*. Selain itu, juga dilakukan pengukuran *R-Square* (R^2) untuk mamahami kesanggupan dari semua variabel independen yang digunakan didalam penelitian terhadap pengaruh variabel terikatnya. Pengujian koefisien determinasi menemukan bahwa nilai *R Square* dari seluruh variabel independen didalam penelitian ialah sebesar 0,741, artinya semua variabel independen yang dipergunakan di dalam penelitian mampu berpengaruh terhadap variabel dependen sebesar 0,741 atau 74,1%, sedangkan sisanya sebesar 25,9% dipengaruhi oleh variabel independen lain yang ada diluar penelitian. Nilai tersebut menandakan bahwa pengaruh dari seluruh variabel dependen tergolong kuat sebab mempunyai nilai lebih besar dari 0,67.

Uji multikolinearitas diujikan dengan melihat nilai *Variance Inflation Factor* (VIF) yang bertujuan untuk mengerti apakah terdapat kecondongan *collinearity* pada konstruk independen. Hasil pengujian VIF di atas memperlihatkan bahwa nilai VIF dari masing-masing variabel independen terhadap variabel dependen lebih kecil dari 10, menandakan bahwa tidak terdapat gejala multikolinearitas didalam penelitian ini.

Tabel 5. Nilai *Variance Inflation Factor* (VIF)

	EI	Ketentuan
EO	4,278	<10
SCE	3,595	
SP	3,273	

Sumber : Hasil Pengolahan Data

Selanjutnya, koefisien jalur diperhatikan untuk dapat mengetahui hipotesis dalam ujinyaa. Dalam hal ini,, uji t dan *p value* tidak diperhatiakan. Halini disebabkan penelitian ini menetapkan keseluruhan anggota populasi sebagai data atau sensus. Arah jalur perlu diperhatikan untuk mengetahui perbedaan dengan arah hipotesisis. Jika arah koefisien jalur berbeda, maka hipotesis tidak terbukti dan sebaliknya.

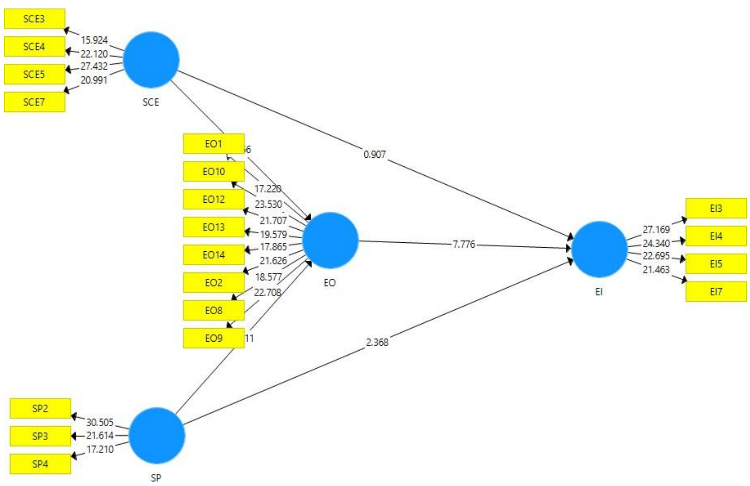
Tabel 6. Hasil Pengujian Hipotesis

Hipotesis	Nilai Koefisien	T-Statistics	P-Value	Keterangan

	Jalur					
H1: SCE -> EO	0.505	8.956	> 1.65	0.000	< 0.05	Didukung
H2: SP -> EO	0.425	7.711		0.000		Didukung
H3: EO -> EI	0.633	7.776		0.000		Didukung
H4: SCE -> EI	0.072	0.907		0.365		Tidak didukung
H5: SP -> EI	0.193	2.368		0.018		Didukung
H6: SCE -> EO -> EI	0.319	6.598		0.000		Didukung
H7: SP -> EO -> EI	0.269	5.034		0.000		Didukung

Sumber : Hasil Pengolahan Data

Tabel 6 memperlihatkan bahwa arah koefisien jalur *Socio-Cultural Environment*, *Social Perception*, dan *Entrepreneurial orientation* terhadap *Entrepreneurial İntention* ialah positif sesuai dengan hipotesis. Arah koefisien jalur *Socio-Cultural Environment* dan *Social Perception* terhadap *Entrepreneurial Orientation* adalah positif sesuai dengan hipotesis. Begitupun dengan arah koefisien jalur *Socio-Cultural Environment* dan *Social Perception* yang dimediasi oleh *Entrepreneurial Orientation* terhadap *Entrepreneurial İntention* adalah positif sesuai dengan hipotesis. Setelahnya, konstruk independen yang memiliki pengaruh terhadap konstruk *Entrepreneurial İntention* adalah konstruk *Social Perception* dan *Entrepreneurial Orientation* yang ditunjukkan dengan nilai *p value* yaitu 0.018 dan 0.000. Sedangkan konstruk independen yang tidak memiliki pengaruh terhadap konstruk *Entrepreneurial İntention* adalah konstruk *Socio-Cultural Environment* yang ditunjukkan dengan nilai *pvalue* yaitu 0.365. Selanjutnya, konstruk independen yang memiliki pengaruh terhadap konstruk *Entrepreneurial orientation* adalah konstruk *Socio-Cultural Environment* dan *Social Perception* yang ditunjukkan dengan nilai *pvalue* yaitu 0.000. Terakhir konstruk independen yang memiliki pengaruh terhadap konstruk *Entrepreneurial Orientation* melalui mediasi *Entrepreneurial Orientation* adalah konstruk *Socio-Cultural Environment* dan *Social Perception* yang ditunjukkan dengan nilai *pvalue* yaitu 0.000.



Gambar 4. Model Hasil Pengujian Hipotesis
Sumber: Hasil Pengolahan Data

Pembahasan

Hasil pengujian terhadap hipotesis awal memberibukti bahwa *Socio-Cultural Environment* mempunyai pengaruhnya kepada *Entrepreneurial Orientation* mahasiswi wanita.

Menurut Hofstede (2011), budaya adalah program pemikiran kolektif yang mengelompokkan anggota dari satu kelompok atau kategori orang dari yang lain. Dengan demikian, lingkungan sosial budaya dapat mencerminkan kondisi suatu masyarakat, khususnya pengusaha perempuan, sebagai fokus penelitian ini. Menurut Hofstede (2011), dimensi budaya terdiri dari jarak kekuatan, kemandirian, maskulinitas, penghindaran ketidakpastian, dan orientasi jangka panjang. Penelitian ini mengadopsi tiga dimensi Hofstede (2011) dalam mengukur lingkungan sosial budaya pengusaha perempuan yang terdiri dari individualisme, maskulinitas, dan penghindaran ketidakpastian. Maskulinitas versus kebalikannya, feminitasi bertumpu pada perputaran peran antara gender, ketegasan, dan daya saing yang mengarah pada "maskulin" dan kesederhanaan dan nilai kepedulian terhadap "feminin". Sedangkan penghindaran ketidakpastian terkait dengan toleransi masyarakat terhadap ketidakpastian dan ambiguitas; itu memperlihatkan sebagaimana budaya mampu mengatur anggotanya merasa nyaman atau tidak. Abdullahi & Zainol (2016) menyatakan bahwa lingkungan sosial budaya yang terdiri dari pendidikan, agama, dan latar belakang keluarga berpengaruh positif terhadap orientasi kewirausahaan.

Hasil pengujian terhadap hipotesis kedua membuktikan bahwa *Social Perception* memiliki pengaruh terhadap *Entrepreneurial Orientation* mahasiswi wanita. Persepsi sosial mampu dijadikan sebuah kerangka pikir dalam hubungan sosial untuk memfasilitasi pengaturan hubungan terhadap orang sekitar, sedangkan dalam bisnis, persepsi sosial adalah upaya seseorang untuk memahami masalah orang lain (Anggadwita & Dhewanto, 2016). Persepsi sosial merupakan sebuah kemampuan untuk menunjukkan dan menjelaskan sebuah organisasi sebagai objek. Oleh karena itu, persepsi sosial ini lebih pada persepsi manusia berdasarkan pengalaman masa lalu dan pembelajaran yang berkaitan dengan orang, benda, atau peristiwa yang serupa. Menurut Mathur & Nihalani (2012), persepsi sosial berkaitan dengan kewirausahaan. Persepsi sosial dalam konteks kewirausahaan merupakan proses seorang wirausahawan dalam menangkap makna objek sosial dan masalah sosial (manusia) dan lingkungan. Persepsi sosial yang dibangun oleh investasi sosial dari nilai-nilai positif membantu masyarakat tumbuh dengan kualitas dan pilihan pertumbuhan yang lebih baik (Mathur & Nihalani, 2012). Kepribadian kemandirian, persaingan sosial, dan orientasi kewirausahaan berperan terhadap keberhasilan wirausaha. Dengan kata lain, pola perilaku manusia dapat dijadikan tolak ukur terkait sebuah persepsi dan orientasi wirausaha. Dengan persepsi sosial, setiap wirausahawan mencoba menentukan apa yang dipikirkan, diyakini, dirasakan, diinginkan, dan diinginkan konsumen. "Fungsi sosial membutuhkan kemampuan untuk mengenali keadaan emosi diri sendiri dan orang lain (Permatasari *et al*., 2020). Hal ini memungkinkan untuk membaca kebutuhan dan keinginan konsumen berdasarkan ekspresi dan perilaku. Didapati hubungan baik antara orientasi kewirausahaan dengan performa usaha kecil melalui jejaring sosial (Fatima & Bilal, 2019). Persepsi sosial berpengaruh pembentukan perempuan menjadi wirausaha dan meliputi konsep diri, nilai, sikap, pengalaman terdahulu, dan harapan. Pengalaman masa lalu, harapan, dan keinginan untuk membantu orang lain sering memberikan kerangka kerja dalam diri seseorang untuk berwirausaha. Orientasi nilai sosial cenderung melayani masyarakat dengan mengambil pendekatan kewirausahaan. Oleh karena itu, persepsi sosial juga mengacu pada bagaimana orang memahami dan mengkategorikan suatu upaya untuk memenuhi kebutuhan konsumennya.

Hasil pengujian terhadap hipotesis keempat membuktikan bahwa *Socio-Cultural Environment* tidak mempunyai pengaruh terhadap *Entrepreneurial İntention*. Hasil penelitian ini menghasilkan bahwa mahasisiwi di Jakarta memang tidak terlalu berkontribusi terhadap minat wanita untuk berwirausaha. Menurut Koe (2016), budaya dan sosial dipengaruhi oleh variabel eksternal pada anteseden niat (norma subjektif, sikap pribadi, dan kontrol perilaku yang dirasakan) dan kekuatan relatif dari hubungan antara konstruksi kognitif ini. Koe (2016) mengembangkan instrumen untuk niat kewirausahaan untuk mengukur konstruksi kognitif yang relevan termasuk peran dimensi budaya dalam kognisi kewirausahaan. Persepsi lingkungan tentang nilai seorang wirausahawan berdampak pada pengembangan wirausaha (Kreiser & Davis, 2010). Salah satu tantangan kewirausahaan perempuan di negara berkembang adalah isu multikultural (Anggadwita *et al*., 2017).

Hasil pengujian terhadap hipotesis kelima membuktikan bahwa persepsi sosial ialah salah satu faktor yang memberi pengaruh niatberwirausaha wanita. Persepsi manusia bersifat selektif; ada faktor internal yang memengaruhi perhatian terhadap kewirausahaan. Dalam kewirausahaan sosial, pengusaha sengaja mengembangkan intervensi dengan berfokus pada keyakinan dan kognisi (Urban, 2020). Persepsi sosial adalah proses psikologis, kognitif dalam kewirausahaan yang mencerminkan sikap, keyakinan, nilai, dan harapan yangdipakai untuk menafsirkan realitas sosial. Nilai-nilai pribadi memengaruhi penciptaan usaha sosial melalui pentingnya pengalaman pribadi, keinginan untuk membuat perubahan, dan kemauan untuk melakukan sesuatu yang berarti dalam hidup seseorang (Anggadwita & Palanic, 2020). Proses tersebut menyajikan beberapa gagasan tentang bagaimana nilai dan motivasi sosial diintegrasikan ke dalam model niat kewirausahaan yang dominan. Realita tidak bisa dirasakan tanpa adanya proses yang rumit dan sebab pribadi dalam setiapnprilaku yang diambil pada hubungan sosial. Dengan demikian, persepsi sosial bersifat pribadi dan subjektif dan dipengaruhi oleh harapan. Persepsi sosial dapat secara langsung memengaruhi niat wirausaha perempuan. Secara alami, seorang wanita akan fokus pada objek yang dianggap perlu. Ketika pengusaha melihat peluang, stimulasi secara signifikan memengaruhi struktur kognitif, harapan dan juga secara langsung dipengaruhi oleh persepsi. Wanita lebih cenderung menerjemahkan keinginan positif menjadi niat kewirausahaan sosial (Dickel & Eckardt, 2021). Perempuan menjadi wirausaha karena faktor kemandirian; wanita berkeinginan untuk bekerja secara mandiri dengan membuka usaha tanpa bergantung pada orang lain. Namun, Anggadwita & Dhewanto (2016) menyatakan persepsi sosial tidak secara langsung memengaruhi niat, tetapi juga secara signifikan memengaruhi sikap pribadi. Niat berwirausaha secara kolaboratif dan interaktif dipengaruhi oleh orientasi kewirausahaan, modal sosial, dan modal psikologis (Mahfud *et al*., 2020). Dengan kata lain, persepsi sosial dapat didefinisikan sebagai kemampuan seorang wirausahawan untuk mengenali dan memahami masalah orang lain dan menerjemahkannya menjadi peluang bisnis. Neneh (2020) juga menyatakan bahwa dukungan sosial berpengaruh positif dan signifikan terhadap niat berwirausaha

Hasil pengujian terhadap hipotesis keenam membuktikan bahwa *Entrepreneurial orientation* memediasi pengaruhnya *social-culture environment* terhadap *entrepreneurial intention*. Berbagai dimensi nilai budaya berdampak pada niat berwirausaha melalui pengambilan risiko dan perilaku proaktif. Berani mengambil risiko adalah sikap berani menghadapi tantangan dengan memanfaatkan sumber daya internal dan eksternal dengan perubahan lingkungan. Dalam usaha kecil, peran sosial budaya memengaruhi organisasi untuk bertindak dan mengambil keputusan secara mandiri. Perpaduan pengetahuan diawali dengan pertukaran pengetahuan yang berdampak pada orientasi kewirausahaan. Tantangan lingkungan eksternal dan budaya organisasi akan memengaruhi organisasi untuk berkembang dan beradaptasi dengan perubahan. Kemajuan usaha perempuan dipengaruhi oleh orientasi kewirausahaan dan pendapatan edukasi eksternal. Studi ini juga melihat faktor eksternal yang dapat ikut andil untuk menciptakan bisnis perempuan yang berkelanjutan. Matlay *et al*. (2014) mengatakan bahwa budaya dan partisipasi secara signifikan meningkatkan niat berwirausaha. Oleh karena itu, lingkungan sosial budaya akan mengikat orientasi kewirausahaan untuk bersaing di pasar dan bertahan melawan pesaing. Dengan demikian, orientasi kewirausahaan yang dipengaruhi oleh iklim sosial budaya akan memengaruhi secara signifikan terhadap niat kewirausahaan perempuan.

Hasil pengujiian terhadap hipotesis ketujuh membuktikan bahwa *Entrepreneurial orientation* memediasi pengaruh *social perception* terhadap *entrepreneurial intention*. Persepsi sosial berpacu pada pandangan bebas individu maupun anggota dalam menciptakan gagasan atau visi sosial mereka. Orientasi kewirausahaan merupakan kegiatan kewirausahaan yang mengacu pada proses kewirausahaan, praktek, gaya pengambilan keputusan, dan perilaku. Dalam konteks wirausaha sosial, persepsi sosial merupakan landasan utama untuk memacu orientasi kewirausahaan danakan memengaruhi pengusaha untuk melihat permasalahan sosial dan motivasi untuk membantu dan memberikan solusi atas permasalahan sosial yang ada. Persepsi sosial memainkan peran penting untuk peningkatn orientasi kewirausahaan dan niat kewirausahaan perempuan (Nasip *et al*., 2017). Orientasi wirausaha pada perempuan diwujudkan dalam dua hal: efektivitas wirausahawan dalam mengelola usahanya dan, kedua, terkait dengan perencanaan bisnis terhadap sikap atau tanggapan di pasar. Dukungan sosial memengaruhi orientasi kewirausahaan dan kepuasan pengusaha perempuan (Jyoti, 2011). Orientasi kewirausahaan dan modal sosial memiliki hubungan dengan kinerja bisnis dan studi menunjukkan bahwa pengambilan risiko dan modal sosial berhubungan positif dengan kinerja bisnis pengusaha perempuan. Karena modal sosial memainkan peran penting bagi pengusaha perempuan, dan pengambilan risiko berkontribusi pada kinerja bisnis, orientasi kewirausahaan yang dipengaruhi oleh pendapatan sosial, oleh karena itu, kemungkinan perusahaan untuk memaksimalkan gagasan dan menginterpretasikan dalam suatu pemecahan masalah berrmasyarakat. Persepsi sosialakan mengadakan orientasi wirausaha untuk memperkirakan kebutuhan sosial dan mencari solusi atas permasalahan tersebut.

KESIMPULAN DAN SARAN

Berdasarkan hasil analisis data dan pembahasan yang telah dilakukan dalam penelitian ini, maka dapatdisimpulkan bahwa:

1. *Socio-Cultural Environment* berpengaruh positif signifikan terhadap *Entrepreneurial Orientation* yang berarti setiap peningkatan pada *Socio-Cultural Environment* akan meningkatkan *Entrepreneurial Orientation* mahasiswi di Indonesia yang sudah mengambil mata kuliah kewirausahaan.
2. *Social Perception* berpengaruh positif signifikan terhadap *Entrepreneurial Orientation* yang berarti setiap peningkatan pada *Social Perception* akan meningkatkan *Entrepreneurial Orientation* mahasiswi di Indonesia yang sudah mengambil mata kuliah kewirausahaan.
3. *Entrepreneurial Orientation* berpengaruh positif signifikan terhadap *Entrepreneurial İntention* yang berarti setiap peningkatan pada *Entrepreneurial Orientation* akan meningkatkan *Entrepreneurial İntention* mahasiswi di Indonesia yang sudah mengambil mata kuliah kewirausahaan.
4. *Socio-Cultural Environment* secara langsung tidak berpengaruh terhadap *Entrepreneurial İntention* yang berarti setiap peningkatan pada *Socio-Cultural Environment* tidak menjamin secara langsung akan meningkatkan *Entrepreneurial İntention* mahasiswi di Indonesia yang sudah mengambil mata kuliah kewirausahaan.
5. *Social Perception* secara langsung berpengaruh positif signifikan terhadap *Entrepreneurial İntention* yang berarti setiap peningkatan pada *Social Perception* secara langsung dapat meningkatkan *Entrepreneurial İntention* mahasiswi di Indonesia yang sudah mengambil mata kuliah kewirausahaan.
6. *Entrepreneurial Orientation* secara signifikan memediasi pengaruh *Socio-Cultural*

Environment terhadap *Entrepreneurial İntention*. Hal ini berarti saat *Socio-Cultural Environment* mengalami peningkatan dan mampu meningkatkan *Entrepreneurial Orientation*, maka akan meningkatkan *Entrepreneurial İntention* mahasiswi di Indonesia yang sudah mengambil mata kuliah kewirausahaan.

7. *Entrepreneurial Orientation* secara signifikan memediasi pengaruh *Social Perception* terhadap *Entrepreneurial İntention*. Hal ini berarti saat *Social Perception* mengalami peningkatan dan mampu meningkatkan *Entrepreneurial Orientation*, maka akan meningkatkan *Entrepreneurial İntention* mahasiswi di Indonesia yang sudah mengambil mata kuliah kewirausahaan.

KETERBATASAN PENELITIAN DAN SARAN UNTUK PENELITIAN SELANJUTNYA

Penelitian ini ditemukan beberapa batasan-batasan penelitian yang menyebabkan penelitian ini kurang sempurna, keterbatasan yang pertama adalah target responden yang spesifik karena penelitian ini berfokus kepada mahasiswi di Indonesia yang sudah mendapatkan pembelajaran atau sedang melakukan pembelajaran kewirausahaan pada saat di perguruan tinggi sehingga tidak semua mahasiswi memenuhi kriteria untuk ikut berpartisipasi dalam penelitian ini, untuk penelitian selanjutnya diharapkan target responden mahasiswi bisa dibuat lebih meluas tidak terbatas hanya pada program studi perguruan tinggi melainkan mencakup sampai target sekolah dan diploma yang tidak dapat melanjut pendidikan ke perguruan tinggi yang bertujuan dapat membandingkan minat berwirausaha mahasiswi yang menyentuh perguruan tinggi dan yang tidak bisa menyentuh perguruan tinggi. Keterbatasan yang kedua adalah jawaban responden yang tidak dapat dipastikan apakah responden memberikan jawaban dengan jujur sehingga pada penelitian selanjutnya diharapkan untuk memastikan mendapatkan jawaban yang tepat dan akurat direkomendasikan untuk memberikan pengarahan terhadap pertanyaan atau pernyataan yang sulit dimengerti untuk menghindari bias pada jawaban atas pertanyaan tersebut. Batasan ketiga adalah penelitian ini masih mengandalkan *software Smart PLS* v.3.2.9 untuk mengolah data, yang merupakan versi lama dari *Smart PLS*. *Smart PLS* v.3.2.9 masih terbatas dari segi fitur jika dibandingkan dengan *Smart PLS* v.4.0.8.4 yang dapat memberikan nilai statistik lebih akurat. Direkomendasikan untuk menggunakan *Smart PLS* versi terbaru yaitu versi 4.0.8.4 untuk mendapat hasil yang lebih optimal dan lebih maksimal. Sebab *Smart PLS* versi sebelumnya masih terbatas secara fitur dibandingkan versi terbarunya.

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THE IMPACT OF SERVICE QUALITY, EMPLOYEE COMPETENCY, AND DIGITALIZATION ON PATIENT SATISFACTION AT X CLINIC

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ABSTRACT

This study aims to analyze the effect of service quality, employee competence, and digitalization on patient satisfaction in clinics. In the digital era, the integration of technology and the competence of healthcare personnel are critical to enhancing service quality and overall patient experiences. Using a quantitative approach, this study applies Structural Equation Modeling (SEM) with Partial Least Squares (PLS) and collects data through a Likert-scale questionnaire. A total of 100 clinic patients were selected as respondents using purposive sampling. The independent variables in this study are service quality, employee competence, and digitalization, while patient satisfaction is the dependent variable. Data was analyzed using SmartPLS to test construct validity, reliability, and inter-variable relationships. The results reveal that all three independent variables have a significant positive influence on patient satisfaction, with digitalization showing the strongest effect, followed by employee competence and service quality. The R-squared value of 0.623 indicates that 62.3% of the variance in patient satisfaction can be explained by the model. These findings suggest that clinics should prioritize digital transformation and continuous development of medical staff competencies, alongside maintaining service quality. The study contributes to the literature by confirming the importance of digital healthcare tools in improving patient satisfaction and providing a foundation for future research to explore additional variables and long-term impacts of digitalization in healthcare.

Keywords: Service Quality; Employee; Competence; Digitalization; Patient Satisfaction; Clinic

INTRODUCTION

The healthcare industry is a sector that continues to grow rapidly with technological advances and paradigm shifts in service management. The quality of healthcare services is a very important factor in determining patient satisfaction, which in turn affects patient loyalty to hospitals or other healthcare facilities. Research shows that high service quality includes various aspects, from the skills of medical personnel to the comfort of existing facilities. A study published in BMC Health Services Research in 2019 found that physician consultation, admission procedures, information disclosure, and the physical environment were key factors influencing patient satisfaction, with physician consultation—reflecting medical personnel competence rated highest and waiting time rated lowest, underscoring the importance of prompt service delivery.

One of the variables that significantly affects service quality is employee competence, especially that of medical personnel. Competence includes knowledge, skills, and attitudes in providing effective and quality services. Saputri & Manik (2024) stated that the competence of HR in hospitals has a significant effect on improving the quality of services received by patients. Andik & Ratnasari (2024) also emphasized that this competence goes beyond technical skills to include interpersonal communication and technological literacy in the healthcare context.

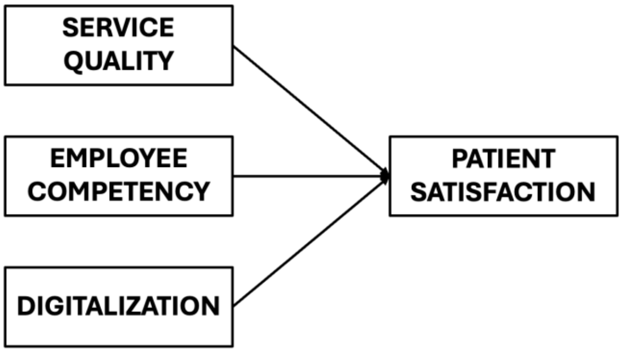
In addition to competence, digitalization in health services also plays a key role in improving service quality. Al-Assaf et al. (2024) explain that the implementation of healthcare 4.0, including technologies such as electronic medical records, telemedicine, and digital-based hospital management systems, can enhance both the efficiency and quality of health services. This creates faster more transparent services and improves communication between patients and medical staff.

Putra et al. (2024) emphasized that high competence of medical personnel, combined with good service quality, positively impacts patient satisfaction and fosters patient loyalty. However, challenges still remain, especially in integrating these factors effectively. Nasution et al. (2023) noted that good service and HR competence must be supported by adequate digital infrastructure to maximize the benefits of digitalization.

This study aims to analyze the impact of service quality, employee competence, and digitalization on patient satisfaction in hospitals. It will explore the interaction between these variables and provide practical recommendations to hospital management for optimizing service quality in the era of digital transformation.

LITERATURE REVIEW

The recent studies of patient satisfaction in healthcare have a strong relationship with service quality as a multi-dimensional concept. Nguyen et al. (2021) conducted a mixed-methods approach in Vietnam and suggests that there are four main dimensions of service quality in private hospitals such as, trust, function (clinical competence and efficiency), emotion, and social influence. Among these, trust and functional quality were the strongest predictors of patient satisfaction and loyalty. These results highlight the imperative contribution of healthcare workforce competence and quality of healthcare service delivery in patient satisfaction.



There is an increasing amount of literature that addresses the competency of workers, here, healthcare professionals. Saputri & Manik (2024) state that human resource competency is one of the most significant factors in improving hospital service quality. Competence in this case is not limited to clinical competence but extends to interpersonal relations, professionalism, and adaptability in conforming to new healthcare environments. Andik & Ratnasari (2024) expanded on this view by stating that quality healthcare delivery now requires not only traditional medical expertise but also communication proficiency and technology sophistication as well. These studies recommend a transition from the definition of healthcare competence as purely clinical to an integrated skill set to give more appropriate medical needs.

At the same time, the use of digital technologies in healthcare is increasing extensively available as healthcare 4.0 has brought additional aspects of service quality. Healthcare 4.0 is defined by Al-Assaf et al. (2024) as a system that integrates electronic medical records (EMRs), telemedicine, technology generated diagnosis, and comprehensive digital management systems. They can help simplify processes, decrease waiting times, and increase transparency in patient care, thus helping in patient satisfaction and healthcare system efficiency. However, their implementation will be beneficial only when there is digital literacy and infrastructure.

Putra et al. (2024) recognizes the relation between digital innovation and human capital as essential for greater patient satisfaction. While they maintain that human contact cannot be replaced by high-tech solutions but can be supplemented by it if effectively used, the work scope of healthcare staff transforms in such a scenario from proximal caregivers to technology-enabled service facilitators. Hybridization of this sort requires ongoing training, flexibility, and systems thinking on the part of employees to leverage technology to its fullest potential. Despite the extending progress, there are still significant gaps in literature.

Nasution et al. (2023) pointed out infrastructural shortcomings precluding the smooth adoption of digital solutions for healthcare organizations, especially in the developing country. Even where there are already qualified personnel and a culture of adherence to high service levels, inadequate digital readiness can lead to decrease of the efficacy of technological interventions. This implies that digitalization, for all its potential, cannot be divorced from the general knowledge and infrastructural environment.

Although each of these areas' digitalization, employee competencies, and service quality has been studied before, research addressing their interactive and cumulative impact on patient satisfaction needs to be further studied. Especially in low-resource environments, where budgetary, training, and infrastructural limitations are the norm, fragmented initiatives carry the danger of obscuring the systemic challenges involved. We need integrative models that consider the interaction among all three of these determinants and how they together shape healthcare outcomes. This not only would assist in constructing more effective interventions, but it also would give policymakers a better idea of where investments in training, infrastructure, or technology are likely to produce the most significant enhancements in patient experience. Lastly, literature supports a clear evolution in how we are characterizing high-quality health care services. Highly qualified staff streamlined delivery of services, and technology integration are all important, each being inadequate when separated. It is only the convergence of the above that holds secret to effective and sustainable improvement in patient satisfaction. Future research must emphasize holistic models that are sensitive to this synergy, especially in the framework of modernizing healthcare systems amidst infrastructural constraints.

RESEARCH METHOD

The research design of this study is quantitative with Structural Equation Modeling (SEM) using the Partial Least Squares (PLS) method. Quantitative research was used to measure statistically the impact of various independent variables on patient satisfaction found on data quantified in numbers gathered from structured questionnaires distributed to respondents.

The SEM-PLS method is specifically appropriate for present research for a number of reasons. First, SEM facilitates the concurrent estimation of numerous relationships amid latent constructs, which is perfect for studies that employ complicated models with plenty of dependent and independent variables. Second, the PLS-SEM method is robust in terms of dealing with small to moderate sample sizes, non-normal data distributions, and more exploration range models.

Reasoning for the Use of Indicators Every construction in the model is operationalized with a set of indicators from valid instruments in the existing literature. The indicators were chosen based on theoretical significance as well as empirical confirmation. Content validity was achieved by adopting the measurement items from earlier peer-reviewed research that has been shown to function in comparable healthcare service settings. In addition, a pre-test or pilot study was done for revising the questionnaire items for readability and ease of use in the local setting.

Population and Sample

The population in this study were patients who had received services at X Clinic. The sample used in this study consisted of 100 randomly selected clinic patients. This sample was selected using a purposive sampling technique to ensure that respondents had direct experience of the quality of services provided by medical personnel and the application of technology in health services.

Research Instrument

In this study, the instrument used was a questionnaire with a Likert scale consisting of five points: strongly agree, agree, neutral, disagree, and strongly disagree. This questionnaire was designed to measure three main variables: service quality, employee competence, and digitalization, and their impact on patient satisfaction. Furthermore, as follows:

1. Service Quality: Service quality in this context refers to the extent to which the service received by patients is in accordance with their expectations, both in terms of medical technical and non-technical aspects.

2. Employee Competence: Employee competence in this study refers to the knowledge, skills, and attitudes possessed by medical personnel and administrative staff in providing services to patients.
3. Digitalization: Digitalization in this study refers to the application of information technology in health services.
4. Patient Satisfaction: Patient satisfaction in this study is a dependent variable measured to evaluate the overall patient experience of hospital services.

Data Collection Technique

Data collection was conducted by distributing questionnaires to 100 respondents who had been selected by purposive sampling. Respondents were asked to provide their assessment of the quality of service received, the competence of employees involved in the service, and the application of digital technology in the hospital where they received services. Data were collected in quantitative form, which will then be analyzed to identify the influence of the three variables on patient satisfaction.

Data Analysis

Data analysis in this study used the Structural Equation Modeling (SEM) technique with SmartPLS, which involved the following stages:

1. Validity Test (Outer Model Evaluation): Evaluate the validity of the construct by looking at the Outer Loadings of the indicators. A high outer loading value indicates a strong relationship between the indicator and the construction being measured (Hair et al., 2020).
2. Reliability Test (Composite Reliability & Cronbach's Alpha): Measure the internal consistency of the construction using Cronbach's Alpha and Composite Reliability. A value > 0.7 indicates good reliability (Hair et al., 2020).
3. Inter-Construct Influence Test (Path Coefficients): Measure the influence between constructs through path analysis. Path coefficients are used to test the influence of service quality, employee competence, and digitalization on patient satisfaction (Hair et al., 2020).
4. R-squared (R^2) Test: Measures the extent to which variation in the dependent construct (patient satisfaction) can be explained by the independent construct. A high R^2 value indicates a good model.
5. Significance Test (Bootstrapping): Using bootstrapping to test the significance of the path coefficient (t-statistics > 1.96, p-value < 0.05) (Hair et al., 2020).

RESULTS AND DISCUSSION

The first result is the distribution of occupations (Table. 1), which shows that the majority of respondents come from the Entrepreneur profession with 20% (20 respondents), followed by Civil Servants (17%) and Housewives (16%). Entrepreneurs are also a fairly common profession category, with a percentage of 14%. Meanwhile, Students, Office Staff, and Influencers each recorded 6% to 5% of the total respondents. In addition, there is also the "Other" category which includes various other types of professions that are not specifically mentioned, with a percentage of 17%. Overall, this table shows that professions that involve more independent workers, such as Entrepreneurs and Entrepreneurs dominate, while formal professions such as Civil Servants also have significant representation.

Table 1. Occupation Frequency

Occupation	Frequency	Percentage
Entrepreneur	20	20%
Civil Servant	17	17%
Housewife	16	16%
Business Owner 14	14	14%
Student	6	6%
Office Staff	5	5%
Influencer	5	5%
Other	17	17%

The distribution of age (Table. 2) shows that the majority of respondents, namely 42%, are from the 41–50 age group. This shows that most survey participants are at a fairly mature age and are experienced in the world of work. In addition, the 31–40 age group is also a significant group with 39% of respondents. The 25–30 age group, which includes 9% of respondents, describes individuals who are starting their careers or have just entered the world of work. The 51–60 age range, which also includes 9% of respondents, tends to have very extensive work experience. Overall, this age distribution shows that the majority of respondents come from the adult age group who are actively working and have extensive experience. They are in a productive age that allows them to provide perspective on experience in the world of work.

Table 2. Age Range Frequency

Age Range	Frequency	Percentage
41-50	42	42%
31-40	39	39%
25-30	9	9%
51-60	9	9%

Before continuing the research, validity and reliability tests were carried out to ensure that the research was worthy of being continued, as further stated as follows:

Table 3. Validity and Reliability Test

No	Costruct	Item	Outer Loading	AVE	Cronbach's Alpha	Composite Reliability	Interpretation
1	Service Quality	SQ1	0.7500	0.60	0.85	0.82	Valid, Reliable
		SQ2	0.7600	0.60	0.85	0.82	Valid, Reliable
		SQ3	0.7700	0.60	0.85	0.82	Valid, Reliable
		SQ4	0.7800	0.60	0.85	0.82	Valid, Reliable
		SQ5	0.7900	0.60	0.85	0.82	Valid, Reliable
2	Employment Competency	EC1	0.7500	0.62	0.88	0.85	Valid, Reliable
		EC2	0.7600	0.62	0.88	0.85	Valid, Reliable
		EC3	0.7700	0.62	0.88	0.85	Valid, Reliable
		EC4	0.7800	0.62	0.88	0.85	Valid, Reliable
		EC5	0.7900	0.62	0.88	0.85	Valid, Reliable
3	Digitalization	D1	0.7500	0.63	0.80	0.80	Valid, Reliable
		D2	0.7600	0.63	0.80	0.80	Valid, Reliable

		D3	0.7700	0.63	0.80	0.80	Valid, Reliable
		D4	0.7800	0.63	0.80	0.80	Valid, Reliable
		D5	0.7900	0.63	0.80	0.80	Valid, Reliable
4	Patient Satisfaction	PS1	0.7500	0.65	0.85	0.83	Valid, Reliable
		PS2	0.7600	0.65	0.85	0.83	Valid, Reliable
		PS3	0.7700	0.65	0.85	0.83	Valid, Reliable
		PS4	0.7800	0.65	0.85	0.83	Valid, Reliable
		PS5	0.7900	0.65	0.85	0.83	Valid, Reliable

The table above shows the results of the validity and reliability tests for the four main constructs in this study, namely Service Quality, Employee Competence, Digitalization, and Patient Satisfaction. All items measured in each construct show results that meet the standards for high validity and reliability.

For Service Quality, all indicators (SQ1 to SQ5) demonstrated outer loading values above 0.7, indicating a strong correlation between each item and the underlying construct. Cronbach's Alpha and Composite Reliability values also exceeded the 0.7 threshold, confirming that the items are internally consistent and that the construction is both reliable and valid. A similar pattern was observed in the Employee Competence construct, where all items (EC1 to EC5) also showed outer loading values greater than 0.7. The high reliability coefficients further support the consistency of these items in accurately measuring the construction. For the Digitalization construct, each item (D1 to D5) also displayed satisfactory outer loading values (above 0.7), along with strong Cronbach's Alpha and Composite Reliability scores. These results indicate that the items are reliable indicators of the digitalization dimension being measured in this study. Finally, the Patient Satisfaction construction was also confirmed to be valid and reliable. All five items (PS1 to PS5) had outer loadings above 0.7, and both Cronbach's Alpha and Composite Reliability values were well above the accepted cut-off, demonstrating strong internal consistency across the indicators.

Overall, all constructions in this study have met the criteria for very good validity and reliability, with results indicating that all items in the construction can be relied upon to measure the intended dimensions. Thus, the data generated from these constructions can be used for further analysis and can be trusted for practical applications.

Table 4. Path Coefficients

No	Construct Independent	Construct Dependent	Path Coefficient	Interpretation
1	Service Quality	Patient Satisfaction	0.578	Moderate positive relationship
2	Employee Competency	Patient Satisfaction	0.638	Moderate positive relationship
3	Digitalization	Patient Satisfaction	0.769	Strong positive relationship

Based on the results of the Path Coefficients analysis, it can be concluded that all three independent variables (service quality, employee competence, and digitalization) have a positive influence on patient satisfaction. Service Quality shows a moderate positive relationship with patient satisfaction, with a path coefficient of 0.578. This suggests that improvements in service quality do contribute to greater patient satisfaction, though the impact is not as strong compared to the other variables. Employee Competence also demonstrates a moderate positive effect, with a path coefficient of 0.638. This indicates that higher levels of employee competence, particularly in how staff deliver care and interact with patients, are associated with increased satisfaction levels. The data reinforces the importance of well-trained and professional staff in creating a positive patient experience. Digitalization, on the other hand, exhibits the strongest positive relationship with patient satisfaction, with a path coefficient of 0.769. This highlights the substantial role that technology plays in enhancing healthcare services. The use of digital tools, such as electronic medical records, telemedicine, and online appointment systems, has a significant and measurable impact on improving patient satisfaction.

In summary, these findings confirm that all three variables positively influence patient satisfaction, with digitalization having the greatest impact, followed by employee competence, and then service quality. These results emphasize the importance of integrating technology and investing in staff development, alongside maintaining quality service standards, to improve the overall patient experience.

Table 5. R-Squared (R^2) Value

No	Construct Dependent	R^2	Interpretation
1	Patient Satisfaction	0.623	The model explains 62.3% of the variation in patient satisfaction. This indicates a moderate explanatory power.

The model, which includes service quality, employee competence, and digitalization as independent variables, explains approximately 62.3% of the variation in patient satisfaction, as indicated by the R^2 value of 0.623. This indicates a moderate level of explanatory power, meaning that although a large percentage of the variables affecting patient satisfaction are captured by the model, the remaining variance may still be influenced by other outside factors.

Table 6. Significance Test

No	Construct Independent	Construct Dependent	Path Coefficient	t-Statistic	p-Value	Interpretation
1	Service Quality	Patient Satisfaction	0.578	2.45	0.014	Significant ($p < 0.05$)
2	Employee Competency	Patient Satisfaction	0.638	2.84	0.005	Significant ($p < 0.05$)
3	Digitalization	Patient Satisfaction	0.769	4.11	0.000	Highly Significant ($p < 0.05$)

Based on the significance test results, it can be concluded that the three independent variables (service quality, employee competence, and digitalization) each have a significant relationship with patient satisfaction. Service quality demonstrated a statistically significant relationship with a t-statistic of 2.45 and a p-value of 0.014, which is below the 0.05 threshold. This indicates that improvements in service quality meaningfully contribute to increased patient satisfaction. Similarly, employee competence showed a significant impact, with a t-statistic of 2.84 and a p-value of 0.005, suggesting that as employee competence improves, so does the level of patient satisfaction. Notably, digitalization exhibited the strongest and most significant effect, with a t-statistic of 4.11 and a p-value of 0.000, indicating a very strong and highly significant relationship. This underscores the substantial role that digital technologies play in shaping a positive patient experience.

In addition, the path coefficients analysis confirmed a positive relationship between all three variables and patient satisfaction. among them, digitalization emerged as the most influential factor, followed by employee competence and service quality. The R-squared (R^2) value of 0.623 indicates that the model accounts for 62.3% of the variation in patient satisfaction. This reflects a moderate level of explanatory power, suggesting that while the studied variables play a significant role, other external factors may also contribute to patient satisfaction.

This study found that all independent variables (service quality, employee competence, and digitalization) have a significant positive effect on patient satisfaction. Among them, digitalization had the strongest influence ($\beta = 0.769$, $p < 0.001$). This confirms the growing relevance of Healthcare 4.0 technologies and digital tools in delivering efficient, transparent, and patient-centered services. The findings are in line with Al-Assaf et al. (2024), who emphasized that digital health infrastructure not only improves operational workflows but also enhances patient perceptions of care.

From a practical point of view, this means clinics need to prioritize digital solutions that make things easier for both patients and staff. For example, having an easy-to-use website or mobile app for booking appointments can reduce waiting times and improve convenience. Likewise, integrating payment systems and digital medical records helps reduce administrative errors and allows smoother coordination across departments. Clinics that invest in these areas are more likely to see higher patient satisfaction and loyalty.

Employee competence also played a strong role in shaping satisfaction. This isn't surprising when healthcare workers are knowledgeable, confident, and communicative, patients feel safer and more respected. But competence today means more than just medical skills. It includes being able to use digital tools, explain procedures clearly, and interact with patients in a kind and professional way. So, clinics should consider providing regular training not only on clinical skills, but also on communication and the use of new digital systems. Even simple things like teaching staff how to use telemedicine platforms properly or how to explain treatment plans clearly can make a big difference in how patients perceive care.

Service quality, while slightly less impactful than the other two factors, still matters. Patients notice whether the facilities are clean, whether staff respond quickly, and whether the overall process is smooth. These basic aspects of service build trust and influence whether patients choose to return or recommend the clinic to others. So, even with technology and staff training, the basics of hospitality (like being on time, offering help, or maintaining cleanliness) can't be overlooked.

Together, these three factors explain around 62.3% of what influences patient satisfaction in this study. That's a good portion, but it also means there are other factors we didn't explore like the clinic's culture, communication between departments, or even the atmosphere and environment. These could be looked at in future studies.

Overall, this research shows that improving patient satisfaction isn't about focusing on just one thing, it's about aligning several key aspects. Digital tools can improve access and efficiency, competent staff make patients feel secure and heard, and good service processes ensure everything runs smoothly. When clinics work in all these areas together, they're more likely to provide a positive and memorable experience for their patients.

CONCLUSION

This study concludes that service quality, employee competence, and digitalization significantly enhance patient satisfaction, with digitalization having the greatest impact. Digital technology improves healthcare efficiency, while competent medical personnel are vital to ensuring positive patient experiences. Although service quality has a moderate effect, it remains an essential component of satisfactory healthcare delivery. These findings underscore the need to integrate digital technologies and invest in staff development to improve patient satisfaction.

However, the study is limited to specific hospitals and healthcare facilities, which may affect the generalizability of the results. Future research should include a broader range of healthcare settings and consider additional factors such as hospital environment, communication practices, and organizational culture. Investigating specific digital innovations such as telemedicine or cloud-based systems and conducting longitudinal studies could offer deeper insights into their long-term effects on patient satisfaction.

APPENDIX

Variable	Indicator	Questionnaire Items
Service Quality	*Tangibles*	SQ1. The hospital facilities appear clean and modern.
	Reliability	SQ2. The hospital delivers services as promised.
	Responsiveness	SQ3. Hospital staff are responsive in assisting patients.
	Assurance	SQ4. Hospital staff demonstrate expertise and knowledge in service delivery
	Empathy	SQ5. Hospital staff are caring and attentive to patient’s needs.
Employee Competency	*Knowledge*	EC1. Hospital employees possess adequate knowledge in their field.
	Skill	EC2. Employees demonstrate skill in carrying out their duties.
	Communication	EC3. Employees are able to communicate clearly and effectively with patients.
	Problem Solving	EC4. Employees are capable of resolving patients’ problems effectively.
	Professionalism	EC5. Employees act professionally when providing services.
Digitalization	*Online Services*	D1. The hospital provides online services
	Digital Payment	D2. Payments at the hospital can be made digitally.
	Information Access	D3. Health information is easily accessible digitally by patients.
	Technology Integration	D4. Technology is utilized to support medical services.

	Ease of Use	D5. The hospital's digital systems are user-friendly for patients.
Patient Satisfaction	*Perceived Service Quality*	PS1. I am satisfied with the quality of service I received.
	Expectation Fulfilment	PS2. The service I received met my expectations.
	Revisit Intention	PS3. I am willing to return to this hospital if needed.
	Recommendation Intention	PS4. I will recommend this hospital to others.

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