



The Impact of Competency Certification and Marketing Mix on the Training Intention in the ICT Training and Certification Sector

Andry Rivan Sumara¹, Ratih Hurriyati²,
Heny Hendrayati³

^{1,2,3} Universitas Pendidikan Indonesia, Bandung, Indonesia
andryrivan@upi.edu

Abstract. The unemployment rate in Indonesia in 2022 remains notably high. According to the Central Statistics Agency, the highest unemployment is observed among vocational high school (*Sekolah Menengah Kejuruan* - SMK) and high school (*Sekolah Menengah Atas* - SMA) graduates. To mitigate unemployment rates among graduates, the government has implemented vocational education and training programs to enhance the performance and skills of human resources to prepare them for a better job market. These vocational education and training programs also require obtaining a competency certification to add value to one's qualifications in the workforce. However, the industry has not yet fully mandated the necessity of competency certification for every job candidate. This study aims to analyze the impact of competency certification on the interest in technical training in the field of Information and Communication Technology (ICT) and to examine the influence of the marketing mix on the interest in participating in ICT training at the Center for Training and Development of Information and Communication Technology. The findings of this study indicate that the Product factor has the most significant impact on training interest, while certification testing and the Price have a relatively low influence on the interest in participating in technical training in the ICT field.

Keywords: Competency Certification, Information Communication, Mix Marketing.

1 Introduction

The Indonesian government has intensified its focus on vocational education to enhance its human resource capacity. Vocational education emphasizes practical skills tailored to meet current industry and labor market. This program targets Diploma and vocational high school graduates because the data from the Central Statistics Agency (BPS) indicates that, as of February 2022, the unemployment rate was highest among vocational high school (*Sekolah Menengah Kejuruan* - SMK) graduates at 10.38%, followed by high school (*Sekolah Menengah Atas* - SMA) graduates at 8.35%, bachelor's and master's degree holders at 6.97%, doctoral graduates at 6.17%, and Diploma I, II, III graduates at 6.09%.

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R. Hurriyati et al. (eds.), *Proceedings of the 9th Global Conference on Business, Management and Entrepreneurship (GCBME 2024)*, Advances in Economics, Business and Management Research 342, https://doi.org/10.2991/978-94-6463-817-2_47

The Indonesian government has enacted Presidential Regulation (Perpres) No. 68 of 2022 on the Revitalization of Vocational Education and Vocational Training to support and enhance the productivity and competitiveness of the workforce. Vocational education is secondary education that prepares students primarily for employment or entrepreneurship in specific fields. Vocational training encompasses all activities aimed at providing, acquiring, enhancing, and developing work competencies, productivity, discipline, attitudes, and work ethics at specific skill and expertise levels according to job or occupational qualifications for employment or entrepreneurship.

The Center for Training and Development of Information and Communication Technology (*Balai Pelatihan dan Pengembangan Teknologi Informasi dan Komunikasi - BPPTIK*) under the Ministry of Communication and Informatics (*Kementerian Komunikasi dan Informatika - Kominfo*) is a Technical Implementation Unit (*Unit Pelaksana Teknis - UPT*) responsible for conducting training, competency testing, certification, and accreditation of government agency training programs, as well as providing services in the field of information and communication technology (ICT). BPPTIK is tasked with providing training and conducting competency certification in ICT through the Digital Talent Scholarship (DTS) program.

Various training and certification institutions employ different marketing strategies, including the marketing mix, to enhance human resources and promote competency certification. The marketing mix refers to all a company's actions to influence demand for its products and services. It is a tool for marketers that includes marketing programs to sharpen segmentation, targeting, and positioning [1]. Reference [2] describe the marketing mix as comprising the 4Ps: Product, Price, Place, and Promotion.

Elements of the Marketing Mix.

- Product refers to anything offered in the market to attract attention or consumption that can satisfy a desire or need [3]. A product is the overall concept of an object or process that provides value to consumers.
- Price is an essential factor in determining the scope and media of marketing. Price attributes include the price list, discounts, special offers, payment terms, and others.
- Place is defined as the location of activities that ensure the product is easily accessible to consumers. This variable emphasizes that consumers can reach or obtain the product.
- Promotion refers to activities carried out by a company to encourage consumers or target segments to purchase or use the offered products.

Interest.

Interest is crucial as individuals may not fully engage in activities without it and lack motivation. Interest drives individuals to strive toward their goals.

2 Methods

This study utilizes both primary and secondary data with a quantitative approach. The research was conducted in June 2024, involving the completion of questionnaires by respondents who were training participants and had undergone the certification process at LSP BPPTIK. Primary data for this study were collected from respondents completing the questionnaire and were analyzed using Smart PLS. Secondary data are those not directly obtained by the researcher but processed by other parties.

The respondents in this study were participants who completed the Digital Talent Scholarship (DTS) training and had undergone certification. The sample consisted of 273 respondents from the LSP BPPTIK of UPT BPPTIK, including West Java and South Sumatra (Lampung, Bengkulu, and Palembang).

3 Results and Discussion

The total of respondents in this research was 273 people. One hundred sixty-eight (168) respondents (62%) were male and 105 (38%) were female. Males strongly preferred participating in training and certification tests in the ICT conducted by BPPTIK.

Most respondents were 21-23 years old, totaling 148 individuals (54%), and 229 respondents (84%) were students. This indicates that the younger workforce has a high level of interest in ICT, particularly digitalization.

Of the respondents, 106 took the competency test/certification at BPPTIK Bekasi, while 81 respondents (30%) underwent competency testing/certification at the Institute of Informatics and Business of Darmajaya.

3.1 Measurement Model Analysis

The measurement model evaluation includes assessing indicator reliability, internal consistency, AVE, and discriminant validity. The initial three metrics fall under convergent validity.

3.2 Convergent Validity

Convergent validity comprises three tests: item reliability (indicator validity), composite reliability, and Average Variance Extracted (AVE). Convergent validity measures the extent to which the indicators explain the dimension. In other words, the higher the convergent validity, the greater the dimension's ability to represent its latent variable.

Reliability Item.

The reliability of an item (indicator validity) can be assessed through the standardized loading factor values. These loading factors represent the correlation between each indicator and its construct. Ideally, a loading factor value above 0.7 indicates that the indicator is valid for measuring the construct. However, a standardized loading factor

value above 0.5 is generally acceptable. Values below 0.5 should be excluded from the model [4]. Figure 1 shows the reliability values.

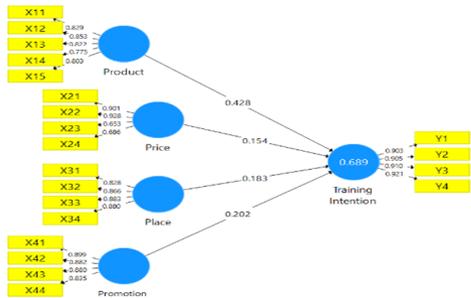


Fig. 1. Measurement Model (Standardized Loading Factor).

Source: Author’s work, 2024.

The calculation results show that the loading factors for the Product, Price, Place, and Promotion variables are all above 0.7; also, for the Training Intention variable, the loading factors are above 0.8. Therefore, each indicator is valid for explaining its respective factor or latent variable: Product, Price, Place, Promotion, and Training Intention.

In addition to demonstrating the item validity of each indicator, the loading factors also indicate the contribution of each indicator to its factor. The indicator with the highest loading factor for the Product variable is that the training provided improves my competencies. For the Price variable, the indicator with the highest loading factor is the certification fee offered, which is affordable. The indicator with the highest loading factor for the Place variable is the certification location, which is well-supported in terms of infrastructure during the exam or implementation. The indicator with the highest loading factor for the Promotion variable is The organizer using easy-to-understand online posters. The indicator with the highest loading factor for the Training Intention variable is “I am interested in participating in the offered training after receiving information from peers or others.”

Composite Reliability.

Composite reliability or construct reliability is assessed using Cronbach’s alpha and D.G. rho (PCA). Values of Cronbach’s alpha and D.G. rho (PCA) above 0.7 indicate high reliability or dependability of the construct as a measurement tool. A threshold value of 0.7 or above is considered acceptable, while values above 0.8 and 0.9 are considered highly satisfactory [5]. This research found that value composite reliability is Place for 0.922, Price 0.875, Product 0.909, Promotion 0.928, and Training Intention 0.951. The result shows that all five latent variables have composite reliability values above 0.7, indicating that each factor possesses very good reliability as a measurement tool.

Average Variance Extracted.

Average Variance Extracted (AVE) represents the proportion of variance in the indicators the latent variable explains relative to the variance caused by measurement error. The standard criterion is that an AVE value above 0.5 indicates good convergent validity of the construct. This means that the latent variable explains, on average, more than half of the variance of its indicators.

The AVE values in the research are 0.747 for Place, 0.667 for Product, 0.828 for Training Intention, 0.764 for Promotion, and 0.642 for Price. All five variables have AVE values exceeding 0.5, indicating that the constructs have good convergent validity. The latent variables can explain, on average, more than half of the variance in their indicators.

3.3 Discriminant Validity

Discriminant validity in reflective measurement models is evaluated through cross-loading and by analyzing the AVE values relative to squared construct correlations. Cross-loading reflects the relationship between an indicator and its corresponding construct versus its associations with alternative constructs. Strong discriminant validity indicates that a construct better accounts for the variance in its indicators than in other constructs. Table 1 presents the discriminant validity values for each indicator.

Table 1 shows that the discriminant validity based on cross-loading values for the indicator X1.1 in the Product variable is 0.829. This indicates that the correlation of indicator X1.1 with the Product variable is higher than with the Price, Place, Promotion, and Training Intention variables. Similarly, the correlation of indicator X2.1 is highest for the Price variable at 0.901 compared to Product, Place, Promotion, Training Intention, and so on. All cross-loading values for each indicator have higher correlations with their respective variables than other variables. This suggests that the placement of indicators within their respective variables is appropriate.

Table 1. Results of discriminant validity.

Indicators	Place	Price	Product	Promotion	Training Intention
X1.1	0.475	0.426	0.829	0.518	0.659
X1.2	0.565	0.451	0.853	0.547	0.692
X1.3	0.516	0.374	0.822	0.597	0.547
X1.4	0.49	0.394	0.775	0.572	0.534
X1.5	0.494	0.485	0.803	0.593	0.654
X2.1	0.531	0.901	0.426	0.535	0.562
X2.2	0.508	0.928	0.433	0.556	0.542
X2.3	0.347	0.653	0.399	0.374	0.4
X2.4	0.479	0.686	0.436	0.518	0.438
X3.1	0.828	0.449	0.511	0.521	0.534
X3.2	0.866	0.496	0.546	0.553	0.543
X3.3	0.883	0.539	0.529	0.6	0.607
X3.4	0.88	0.538	0.564	0.609	0.637
X4.1	0.608	0.525	0.635	0.899	0.632
X4.2	0.57	0.546	0.602	0.882	0.6
X4.3	0.566	0.529	0.596	0.88	0.649

Indicators	Place	Price	Product	Promotion	Training Intention
X4.4	0.572	0.579	0.574	0.835	0.615
Y1	0.628	0.575	0.65	0.636	0.903
Y2	0.582	0.531	0.664	0.642	0.905
Y3	0.605	0.559	0.747	0.648	0.91
Y4	0.637	0.563	0.708	0.673	0.921

Source: Author’s work, 2024.

3.4 Structural Model Analysis

Evaluating the structural model involves several stages. The first stage involves examining the significance of the relationships between constructs, which is reflected in the path coefficients that indicate the strength of these relationships.

3.5 Overall Model Fit Test

To validate the overall model, the goodness of fit (GoF) index introduced by Hu and Bentler [6] and referenced in [7] and [8] is used. The GoF index is a single measure used to validate the combined performance of the measurement and structural models. It is derived from the Standardized Root Mean Square Residual (SRMR) and the Normal Fit Index (NFI).

The SRMR value in this research is 0.055, which is less than 0.08, indicating a Good Fit. The NFI value is 0.858, above 0.50 but below 0.90, resulting in a Marginal Fit conclusion. This means that the model can reasonably explain the empirical data.

3.6 Causal Relationship Analysis

Statistical testing for causal relationships in the structural model is conducted at a 5% significance level, with a critical t-value of ±1.98. The estimated results for all causal relationships in the study are presented in the following Smart PLS3 output shown in Figure 2

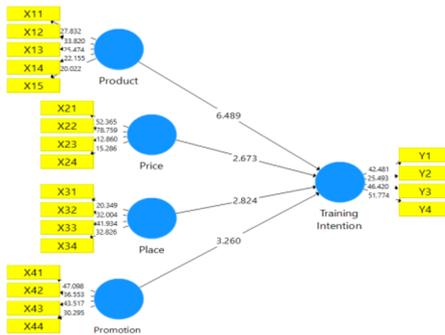


Fig. 2. Structural Model (T-Value).
Source: Author’s work, 2024.

T-value and Structural Path Coefficients.

From the causal equations shown in Figure 3.2, a t-value with an absolute value greater than 1.98 indicates that the path coefficient is significant [8]. There are four significant path coefficients, none of which are insignificant. The hypothesis testing section will further explain the interpretation of these path coefficients.

Coefficient of Determination (R²).

The result R² value for the Training Intention variable is 0.684. The R² value indicates the extent to which each independent variable can explain the dependent variable. Training Intention has an R² of 0.684, meaning that Product, Price, Place, and Promotion together explain 68.4% of the variance in Training Intention, while other factors explain the rest.

3.7 Partial Hypothesis Testing

This study tests four hypotheses and will be compared with the critical t-value or with p-values against a significance level of 5%. Table 2 summarizes the hypothesis testing results for answering the research questions:

Table 2. Partial Hypothesis Testing.

Hypotheses	Original Sample (O)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))	P Values
<i>Place -> Training Intention</i>	0.183	0.065	2.824	0.005
<i>Price -> Training Intention</i>	0.154	0.058	2.673	0.008
<i>Product -> Training Intention</i>	0.428	0.066	6.489	0.000
<i>Promotion -> Training Intention</i>	0.202	0.062	3.26	0.001

Source: Author’s work, 2024.

From the findings illustrated in Table 2, which encapsulates the outcomes of the research model hypotheses and shows that all p-values are below the 5% significance threshold, we can conclude:

1. The t-statistic value for the effect of Place on Training Intention is 2.824 with a p-value of 0.005; H1 is accepted. Therefore, there is a significant effect of Place on Training Intention. The positive path coefficient indicates that as the Place gets better, Training Intention also increases. This association emphasizes the significance of environment elements in educational settings and establishes the groundwork for additional investigation and advancement within this domain of inquiry. Subsequent research may expand upon these revelations to enhance our comprehension of how Locale impacts educational results, ultimately facilitating the development of more efficacious instructional methodologies and environments.
2. The t-statistic value of the effect of Price on Training Intention is 2.673 with a p-value of 0.008; H4 is accepted. Thus, price has a significant impact on training

intention. The positive path coefficient indicates that as Price increases, Training Intention also increases. The positive path coefficient signifies that as Price escalates, Training Intention concurrently escalates, implying that participants may interpret elevated prices as indicative of enhanced value or quality in training programs. This association accentuates the significance of pricing strategies in shaping consumer behavior and readiness to participate in training opportunities.

3. The t-statistic value for the effect of Product on Training Intention is 6.489 with a p-value of 0.000; H2 is accepted. Therefore, the product has a significant effect on training intention. The positive path coefficient indicates that as Product quality improves, Training Intention increases, underscoring the importance of investing in high-quality products to foster a more engaged and motivated training environment.
4. The t-statistic value for the effect of Promotion on Training Intention is 3.260 with a p-value of 0.001; H3 is accepted. Hence, promotion has a significant impact on training intention. The positive path coefficient indicates that as Promotion increases, Training Intention also increases. The positive path coefficient indicates that as Promotion increases, Training Intention also increases. These results underscore the importance of strategic marketing initiatives in fostering a conducive learning environment, which is essential for enhancing employee engagement and performance.

4 Conclusions

Based on the results and discussions, it can be inferred that both competency certification and the marketing mix significantly impact the intention to participate in technical training in ICT at BPPTIK Kominfo. Among the sub-variables, the Product shows a high level of significance. The training and certification provided are key factors contributing to respondents' interest in participating in further training and certification. Conversely, Price is identified as having a lower significance level among respondents in ICT technical training and certification at BPPTIK Kominfo.

5 Acknowledgement

This research would not have been feasible without the assistance of BPPTIK MCIT for authorization and all personnel of BPPTIK.

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