# PROTOTYPE DESIGN OF BUSINESS PERFORMANCE ASSESSMENT OF TENANTS INDEPENDENT ENTREPRENEURSHIP PROGRAM USING THE EFQM MODEL

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Abstract: Additionally, the Independent Entrepreneur Program (WMK) at Shipbuilding Institute of Polytechnic Surabaya (PPNS) organizers have not yet had a well-integrated information system to effectively and efficiently gather information for business performance assessments of the tenants. This research aims to develop a prototype of the Information System for Business Performance Assessment of WMK PBLT PPNS tenants using the European Foundation for Quality Management (EFQM) model. The result of this research is a prototype of the Information System for Business Performance Assessment of WMK PBLT PPNS tenants. Based on the EFQM assessment, the average total business performance assessment score obtained is 897, with the highest category being "Orientation on Integrated Quality Management" with a ratification score >800-1000. That indicates that the businesses run by the tenants have achieved optimal performance results. With this prototype, it is hoped to assist in the process of assessing tenant business performance more effectively and efficiently.

Keywords: prototype, information system, business performance assessment, WMK PBLT PPNS tenants, EFQM model

#### **INTRODUCTION**

In order to support the achievement of increasing the target number of entrepreneurs at the tertiary level, the Ministry of Education, Culture, Research and Technology (Kemendikbud Ristek) is guided by the Regulation of the Minister of Education and Culture (Permendikbud) of the Republic of Indonesia Number 3 of 2020 concerning National Higher Education Standards mentioned in article 14 paragraph 5 regarding the form of learning in the form of entrepreneurship, has stipulated the implementation of the Independent Entrepreneurial Program (WMK) as a means to develop student potential, innovation, creativity, and capacity (Kemendikbudristek, 2022a). In implementing the WMK 2022 program, the Shipbuilding Institute of Polytechnic Surabaya (PPNS) became 1 of 17 tertiary institutions selected as organizers, under the auspices of the PPNS Business Incubator as the main organization in facilitating incubation activities as well as developing innovation and entrepreneurship, the implementation of the WMK PPNS program carries the "Project Based Learning Technopreneurship" (PBLT) (Kemendikbudristek, 2022b), namely an entrepreneurial program that is packaged into a form of projectbased learning. PBLT PPNS focuses on producing products or services, which are relevant to the study program of the program participants.

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In the WMK PBLT PPNS program, 103 tenants produced 103 new businesses, new businesses are prone to failure caused by several factors caused by the risks in the business environment previously mentioned. Therefore, it is necessary to assess the overall business performance of the tenants to identify the extent to which their business performance is running, this is intended so that the potential for similar failures can be minimized in the future. To identify the possibility of an increase or decrease in business performance in WMK PBLT PPNS program tenants. The author first distributed short questionnaires after the implementation of the program which contained questions related to the business continuity of each tenant of the WMK PBLT PPNS program and then carried out follow-up research after reviewing the responses from each of these groups.

Information obtained that 78% or 80 of the 103 tenants of the WMK PBLT PPNS program stated that they were unable to continue the business that had been developed jointly with their group, while only 22% or 23 of 103 of the program tenants stated that they could. This means that most of the businesses run by tenants of the WMK PBLT PPNS program experience instability in business performance which results in failures in managing the businesses they have formed through the WMK PBLT PPNS program.

For this reason, an evaluation of the remaining 22% of tenants is needed to assess how far the tenant business performance of the WMK PBLT PPNS program is running. Thus, it is necessary to have a method that provides modeling for assessing aspects of business performance that are carried out as a whole, such as organizational, operational, marketing, financial, human resource development aspects, etc. Thus, the authors found a model that fits the indicators/assessment criteria to evaluate the business performance of the tenant program as a whole, this model is the European Foundation for Quality Management (EFQM) model (Gómez et al., 2015).

Activities supporting the program are still carried out manually such as chat communication, data collection on Google Forms, as well as data storage/archiving on Google Drive which

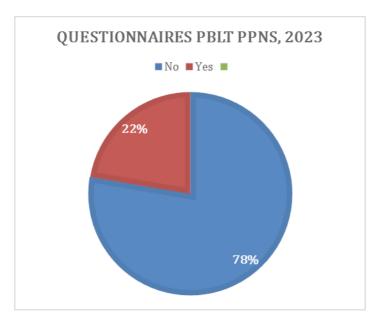


Figure 1 Percentage of Business Continuity Prospects of Independent Entrepreneurial Tenants PBLT PPNS

sometimes creates problems for program organizers because the media is not well integrated. In addition, tenant business performance cannot be properly transparent through the information system previously used by the tenant program, namely the Learning Management System/LMS WMK PBLT PPNS. Because, this system only focuses on submitting assignments and also uploading material but does not yet have the ability to specifically assist in assessing business performance so that the level of business performance being carried out cannot be identified properly.

The development of a business performance assessment information system using the EFQM model is packaged in the form of a websitebased platform prototype using an Agile development flow that can be used as a whole by program participants and organizers (Mumpuni & Sukarno, 2014; Sudirman et al., 2021). Thus, with the development of this prototype, assessment of tenant business performance can be assisted, and business reports will be submitted synchronously, can be monitored, and also fully controlled by the WMK PBLT PPNS organizers, especially program mentors, so that the level of business performance obtained from each tenants, can be collected and transparent effectively and efficiently. Also, potential failures can be identified so that solutions can be formulated immediately to minimize these potential failures by taking steps for the next improvement process.

Based on the background described above, the authors will conduct research in the form of designing a prototype business performance assessment of tenants of the WMK PBLT PPNS program in the form of a Final Project entitled "Prototype Design of Tenant Business Performance Assessment of the Independent Entrepreneurial Program Shipbuilding Institute of Polytechnic Surabaya Using the European Foundation Model for Quality Management".

## METHOD

The author conducted observations and interviews with the Business Incubator as the organizer of the WMK PBLT PPNS program to obtain primary data used to determine the flow of program implementation, type of program series, program timeline, number of tenants, and also other supporting data such as guidebooks (pocket books) programs, tenant business categories and progress reports as well as tenant assessments which will be used as a reference in the process of designing a prototype information system for assessing business performance for WMK PBLT PPNS tenants. The author begins to perform data processing from the data that has been obtained before. These data will be processed to compile an overview of business processes using the Business Process Model and Notation (BPMN) in developing a prototype business performance assessment platform for WMK PBLT PPNS tenants (Pullonen et al., 2019).

The author determines the selection of the method to be used in assessing the business performance of WMK PBLT PPNS tenants using the European Foundation for Quality Management 2020 method. Making a website-based prototype platform for assessing business performance for WMK PBLT PPNS tenants was developed using the VS Code application and also the Laravel framework with the development method Agile as well as the PHP programming language. the assessment method that will be used in the process of assessing the business performance of WMK PBLT PPNS tenants. At this stage, the author uses an external assessment method using the European Foundation

for Quality Management 2020 model as a business performance assessment method.

Research with the EFQM model was conducted by Fonseca et al., (2021) where the object under study focused on new things from the EFQM 2020 model and its relationship/ implications with the Industry 4.0 paradigm (the link between the EFQM 2020 model and Industry 4.0). The discussion of this research contains several linkages between the EFQM 2020 model and Industry 4.0 at the level of criteria and guiding points, which can support successful digital transformation by combining quality and excellence with Industry 4.0. This research also discusses the old EFQM model with 9 assessment criteria, the new EFQM model with 7 assessment criteria, as well as a comparison of the two models.

Another study uses the EFQM model where the object under study is 3 Food and Beverages franchises (Putra & Setyadi, 2021). Designing a performance appraisal system for a food and beverages franchise business. The system development method uses the Agile method. The method used by EFQM. In the food and beverage franchise business performance assessment system in the journal, 1 out of 3 franchises has a high level of business performance among the 2 other franchises. There are 5 assessment criteria that are used as a reference (People, Customer Results, Business Results, Resources, Process Products and Services).

In line with development, an assessment of quality needs to be carried out to determine the level of effectiveness and convenience for users. Hadi, Az-Zahra, & Fanani (2018) research on assessment was carried out. The object studied was the KAI Mobile Application user. Measuring the quality of the KAI Access Mobile Application. The research method used is Usability Testing and Use Questionnaire. In this study, testing was carried out on 4 parameters consisting of 30 question attributes and was carried out using a Likert scale.

In assessing the business performance of WMK PBLT PPNS tenants, the EFQM 2020 is used as a reference in measuring business performance and progress (Rakhmah, 2017), as well as providing recommendations for improving and enhancing business performance (Fonseca, 2022). This assessment is in the form of a questionnaire consisting of questions contained in each of the EFQM 2020 criteria, these questions are assessed using the RADAR assessment model which is an acronym for Result, Approach, Deploy, Assessment and Refinement. The RADAR model assists businesses in analyzing and improving their performance by continuously focusing on results, approach, implementation, assessment and review (Calvo-Mora et al., 2013). The RADAR model will assist businesses in identifying their strengths and weaknesses, developing improvement strategies, and monitoring and measuring their progress towards achieving excellence and sustainability (Dodangeh et al., 2011).

Testing of the platform prototype that was created as part of the WMK PBLT PPNS tenant business performance assessment. The purpose of this test is to identify and evaluate the user experience of the prototype. Testing was carried out using the Usability Testing method which involved respondents from various roles involved in the program, namely managers, mentors/validators, and tenants of the WMK PBLT PPNS program. To collect data, respondents were asked to provide an assessment using a rating scale (rating scale) on various aspects and features of the prototype.

The design process made in this information system only focuses on designing a prototype of the tenant business performance assessment of the Independent Entrepreneurial Program Project Based Learning Technopreneurship Shipbuilding Institute of Polytechnic Surabaya. The method used in the development of the business performance assessment prototype for the object of this research is the European Foundation for Quality Management 2020 model. The information displayed on this prototype only includes information regarding the business performance assessment of the tenants of the Independent Entrepreneur program.

In this research, a mixed-method approach was utilized to comprehensively assess the business performance of WMK PBLT PPNS tenants. Qualitative data were gathered through observations and interviews with the Business Incubator to gain in-depth insights into program implementation and related processes. The Business Process Model and Notation (BPMN) was employed to visualize and represent the program's flow, enhancing qualitative understanding. Additionally, the European Foundation for Quality Management (EFQM) 2020 model offered a structured framework for quantitative assessment, involving questionnaires and the RADAR model to evaluate Results, Approach, Deploy, Assessment, and Refinement. The research design included purposeful informant selection, with participants such as managers, mentors/validators, and tenants, while data validity was ensured through member checking and triangulation.

The discussion integrated research findings and related them to the methodology employed. The EFQM model's application provided valuable insights into tenant business performance, while comparisons with previous studies revealed unique contributions specific to the WMK PBLT PPNS program. Usability testing of the prototype involved various program stakeholders, collecting feedback on the user experience. The prototype's development using Agile and PHP programming ensures a user-centric approach to business performance assessment. The combination of qualitative and quantitative methods offers a comprehensive evaluation of business performance, with usability testing guiding further improvements. This research provides a holistic understanding of research design, data collection, and analysis, underlining their significance in yielding valuable insights and recommendations for business performance enhancement.

### RESULTS

The Process of Determining Business Performance Assessment of WMK PBLT PPNS Tenants 2022

The Assessment Model used in the 2022 WMK PBLT PPNS Tenant Business Performance Assessment Information System is the 2020 European Foundation for Quality Management

No.	Criteria	
1	Purpose, vision, & strategy	
2	Organisational culture & leadership	
3	Engaging stakeholders	
4	Creating sustainable value	
5	Driving performance & transformation	
6	Stakeholder perceptions	
7	Strategic & operational performance	

Table 1 Business Performance Assessment Criteria for the 2020 EFQM Method

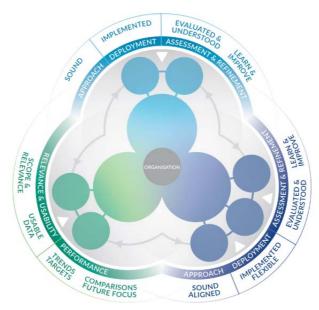


Figure 2 RADAR Assessment Indicators on EFQM 2020 Source: Based on Fonseca, Amaral, & Oliveira (2021)

(EFQM) model, there are several stages in the process of determining this assessment, starting from determining the dimensions of the 2020 EFQM assessment, determining the 2020 EFQM Criteria, determine the EFQM 2020 Sub Criteria, and determine the weighting of the assessment using the RADAR model.

After determining the assessment sub-criteria, then the assessment is weighted using the RADAR method. RADAR is used to assess 7 predefined EFQM criteria from 3 dimensions (Direction, Execution, and Result). To assess each of these RADAR approaches, there are specific values that need to be considered as shown in the Figure 2.

All dimensions consisting of criteria and sub-criteria are assessed using the RADAR method. To get the value of each sub-criteria, it



Figure 3 EFQM Assessment Weight using RADAR Matrix Source: Based on Fonseca, Amaral, & Oliveira (2021)

No.	Criteria	Score
1	Purpose, vision & strategy	100
2	Organisational culture & leadership	100
3	Engaging stakeholders	100
4	Creating sustainable value	200
5	Driving performance & transformation	100
6	Stakeholder perceptions	200
7	Strategic & operational performance	200
	Total	1000

Table 2 Assessment Weight per EFQM Criteria 2020

is done by calculating the average value of the total number of specific values that have been given with a total overall value of 1000 as shown in Figure 3 above. Based on Figure 3 above, the classification of each of the 7 criteria is divided into categories shown in the Table 2.

According to Sintawati, et al. (2020), the following table presents the classification of the EFQM Model scores which refer to assessments of business orientation.

The Process of Designing an Information System Prototype for Business Performance Assessment of WMK PBLT PPNS Tenants 2022

The Business Process Modeling and Notation (BPMN) of the WMK PBLT PPNS 2022 tenant business performance assessment process uses a website-based information system prototype. The process begins with granting access to account registration on the related website by the admin to the tenants and then the process of filling in the required data from each tenant business such as business group, business name, business description, up to the business logo. After the data is filled in accordingly, the tenant begins to fill in a business performance assessment in accordance with the assessment indicators presented on the website. This process also includes data entry in the form of uploading the required data from each assessment indicator. Then, the validator will carry out an assessment through validating the assessment data that has been filled in by the tenant. In the final stage, the assessment data will be collected and stored by the admin for further transparency in the form of a final assessment report to tenants as a form of evaluation to identify related to the level of business performance of each tenant group.

# Design of Information System Prototype for Business Performance Evaluation of WMK PBLT PPNS Tenants

Use case diagram of the business performance assessment information system for WMK PBLT PPNS 2022 tenants which consists of a

 Table 3 Classification of Business Performance Assessment Scores Using the Business Orientation Model

the Business Orientation Woder						
Score	Business Orientation					
0-200	Product orientation					
>200-400	Process orientation					
>400-600	System orientation					
>600-800	Chain orientation					
>800-1000	Orientation on integrated quality management					



Figure 4 Homepage Information System for Business Performance Evaluation of WMK PBLT PPNS Tenants

series of actions each carried out by actors such as Admins, Validators and Users. Use case diagrams are a type of diagram in UML (Unified Modeling Language) that are used to describe interactions between actors (entities or users) and the system being developed.

The use case is a visual representation of a sequence of actions or activities carried out by actors in the system, there are 3 actors who each act as tenants, validators as secondary admins, and also super admins as the main admin. The Use Case also displays the sequence of activities carried out by each actor starting from account login, data entry, data processing, to account logout. In addition, the display of the Use Case Diagram can also be broken down into a separate view of each actor, namely admin, validator and user.

The display on the main dashboard admin of the Merdeka Entrepreneurial Program Project Based Learning Technopreneurship Shipbuilding Institute of Polytechnic Surabaya is designed to provide convenience and functionality to admins in managing and supervising activities and related data. On the main admin dashboard, there is a header that presents the admin profile features, as well as a sidebar that presents the main features.

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O Validasi Asesmen	admin@gmail.com	
Laporan	Nama Lengkap	Retype Password Baru
O Laporan Penilaian	Administrator	
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Figure 5 Information System Administrator Profile of Business Performance Evaluation of WMK PBLT PPNS Tenants

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Figure 6 Display of Sub Feature Master Access Rights Information System Business Performance Assessment Tenants WMK PBLT PPNS

In addition to the Admin view, there is also a view from the user (tenant), as follows. Just like the admin view, on the front page of the user presents the initial view of the Business Performance Assessment Information System Prototype of WMK PBLT PPNS Tenants which consists of the main background in the form of the PPNS directorate building, the logo of the Merdeka Entrepreneurship program Project Based Learning Technopreneurship Shipbuilding Institute of Polytechnic Surabaya, as well as sign-in instructions /login by entering the username and password that you have correctly according to the username and password that was created before. If the user does not have an account, the user is required to register first by clicking the "Register a new membership" button. Access the main page of the system, which can be accessed via the link https://businessperformancetoolswmkpbltppns.site.

The registration page presents the tenant registration process which consists of 2 stages, namely the "tenant" stage and also the "user" stage. On the tenant page, a business category menu, business name, and business description are presented that must be filled in by the tenant. After filling in the previous 3 fields, then the tenant is directed to the user stage to make the final filling, this field includes Email, Password, & Password Confirmation.



Figure 7 Display of the Front Page of the Business Performance Assessment Information System for WMK PBLT PPNS Tenants

### DISCUSSION

The findings of this study, focused on the prototype design of business performance assessment for tenants in the Independent Entrepreneurship Program using the EFQM model, contribute to the existing body of research in several key ways. Firstly, this study builds upon previous research in the domain of business performance assessment by integrating the EFQM 2020 model and the RADAR framework. While prior studies may have explored either EFQM or RADAR individually, this research uniquely combines both models to provide a comprehensive evaluation of tenant businesses. This integration allows for a more holistic assessment of performance, emphasizing not only the results achieved but also the approaches and deployment strategies that contribute to excellence in business operations.

Furthermore, the study's determination that the average total performance score of the respondents falls under the "Orientation on Integrated Quality Management" category aligns with the emphasis on quality as a core element of business processes. This corroborates existing research that underscores the importance of quality management for business success. By demonstrating that the tenant businesses have successfully integrated quality into their operations, this study strengthens the understanding that excellence in operational aspects can be achieved through a holistic approach to quality. In this way, it validates the relevance of the EFQM model and the RADAR framework in assessing contemporary business practices.

However, it's important to acknowledge the limitations of this study. One limitation lies in the sample size, which comprises 23 respondents from a specific program. This relatively small sample might limit the generalizability of the findings to a broader context. While the study provides valuable insights for businesses in similar programs, caution should be exercised when extending these findings to diverse contexts and industries. Additionally, the study's focus on a single program might not capture the diversity of entrepreneurship programs and their varying outcomes. As a result, the findings should be interpreted in the context of this specific program.

As for future research directions, this study opens up several avenues for exploration. Expanding the sample size to include a more diverse range of entrepreneurial programs and industries could enhance the external validity of the findings and validate the broader applicability of the EFQM model and RADAR framework. Additionally, investigating the long-term sustainability of the integrated quality management approach adopted by the tenant businesses could provide valuable insights into the lasting impact of such an approach. This longitudinal perspective would offer a more comprehensive understanding of the benefits of integrated quality management. Lastly, conducting comparative studies that analyze the effectiveness of other performance assessment models in similar contexts could contribute to a richer understanding of their respective strengths and weaknesses, providing program administrators and business owners with a wider array of tools for evaluating and improving performance.

From a theoretical perspective, this research enriches the understanding of how the integration of quality management principles, as outlined by the EFQM 2020 and RADAR models, can enhance business performance in the context of independent entrepreneurship programs. The study not only provides evidence of the models' applicability in real-world scenarios but also demonstrates that a holistic approach to quality management aligns with the current demands of the dynamic and competitive business environment. It endorses the idea that quality and sustainability are integral components of business success, providing theoretical support for these concepts.

From a practical standpoint, this research has significant implications for both tenants in independent entrepreneurship programs and program administrators. The confirmation that tenant businesses are oriented toward integrated quality management underscores the efficacy of this approach for achieving excellence. This insight can guide entrepreneurs in placing a strong emphasis on quality in their operations, aligning their practices with the current zeitgeist of quality-centric business strategies. For program administrators, the usability testing results for the business performance assessment information system offer practical guidance for designing user-friendly systems. The high scores across usability indicators signify that the system is user-friendly, easy to learn, and useful, which enhances its feasibility and adoption. This implication can guide the refinement and deployment of similar information systems in other entrepreneurship programs, contributing to the streamlining of performance assessment processes in a digital age.

In the context of today's dynamic and competitive business environment, where quality and sustainable practices are not just buzzwords but integral to success, the insights from this research align with the current zeitgeist. Businesses and entrepreneurs are increasingly expected to adopt a holistic view of quality management, and this study provides evidence of its effectiveness. Furthermore, the user-friendly prototype platform's relevance in the age of digitalization and remote work underscores its potential applicability in addressing contemporary challenges related to assessing and improving business performance. It positions your research findings as a valuable contribution to the ongoing discourse on quality management in entrepreneurship.

The business performance assessment activity for the WMK PBLT PPNS tenant program is carried out using the European Foundation for Quality Management (EFQM) 2020 model which consists of 3 assessment dimensions which are divided into 7 assessment criteria and reclassified into 32 Assessment subcriteria which are used as the main reference in assessment in research This. Meanwhile, the weighting of this assessment is carried out using the RADAR model which is an acronym for Result, Approach, Deployment, Assessment & Refinement. The assessment of tenant business performance for the WMK PBLT PPNS program was carried out using a prototype platform for assessing the business performance of tenants for the WMK PBLT PPNS program. System business processes are described using Business Process Modeling and Notation (BPMN). The design of the prototype platform was carried out using the Agile development model, the PHP programming language with VS Code tools and using the MySQL database, and the Laravel Framework. This prototype is intended to help facilitate the organizers of the WMK PBLT PPNS program in assessing tenant business performance and can be accessed via the link https://businessperformancetoolswmk pbltppns.site. The results of the assessment conducted by researchers include data taken from WMK PBLT PPNS tenants through the Business Performance Assessment Platform Prototype The WMK PBLT PPNS program tenants use the EFQM 2020 assessment model with the RADAR assessment weighting model. Based on data taken from 23 respondents, an average total assessment of business performance from

each respondent was 897 points in the "Orientation on Integrated Quality Management" category or the category with the highest level with an assessment ratification of >800–1000. This means that businesses run by tenants have been able to implement a quality management system that is well integrated and focuses on implementing best practices to achieve optimal performance results. Data retrieval of the Usability Testing Prototype Questionnaire Platform for Business Performance Assessment Tenants for the WMK PBLT PPNS program was carried out online using the Google Form via the link https://bit.ly/KuesionerSistemInformasi WMKPBLTPPNS with 23 respondents who were tenants of the WMK PBLT PPNS program. Based on the calculation results of Usability Testing, a total score of 3220 is obtained. When compared with the expected total value of 3910, Usability Testing obtains an assessment of 83% so that it is included in the very feasible category. Therefore, the results of the evaluation of this prototype get a very feasible category to be used by PPNS WMK PBLT program administrators.

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