

## MONITORING SYSTEM AND PERFORMANCE MEASUREMENT USING WEBSITE-BASED BALANCED SCORECARD METHOD

Suhendra Robby<sup>1\*</sup>, Nurul Mutiah<sup>2</sup>, Ibnur Russi<sup>3</sup>

<sup>1</sup>Information System, Tanjungpura University

*e-mail* : \*suhendrarobby@student.untan.ac.id

**Abstract** : Directorate General of State Assets West Kalimantan Regional Office each year has a work program provided by the central DJKN that must be completed, The work program is carried out with the target set by the central DJKN. DJKN has a standard method in measuring each work plan program, namely using the Balanced Scorecard method, But in its application there are still many processes in measuring and monitoring plans that are done manually so that business processes are carried out for a long time and are ineffective and without an information system, the monitoring process cannot be done in real time anywhere and anytime so that some work plans are late accordingly. with targets that will directly affect performance. This study aims to cut the manual business process by using a website-based performance monitoring and measurement system so that it is hoped that the performance monitoring process can be carried out optimally in real time and easily. The results of this research are in the form of a website-based performance monitoring and measurement system that has been tested for system functionalities and system interfaces by obtaining results according to each functional system and system interface available and testing for users at the Directorate General of State Assets West Kalimantan Regional Office obtaining a percentage of 88.55 % .

**Keywords** : Balanced Scorecard ; DJKN ; Monitoring ; Performance Measurement

**Abstract** : Directorate General State Assets (DGST ) West Kalimantan Regional Office every year year have a given work program by the central DJKN which must completed , work program implemented with the target that has been set by the central DJKN . DJKN has standard method in measure every program plan work that is use the Balanced Scorecard method, but in implementation still many processes in measure and monitoring plan work done manually so that the business processes that are run eat long time and no effective as well as without existence system information make the monitoring process not can done by realtime everywhere and any time so that make a number of plan work late no in accordance with a target that direct will influence performance . Study this aim cut those manual business processes with use monitoring system and measurement performance web -based so that expected performance monitoring process could done by maximum with easy and realtime , Results study this in the form of monitoring system and measurement performance based on a website that has been tested functional system and interface system with get results in accordance will every functional system and interface existing system \_ and testing to users at the West Kalimantan Regional Office DJKN get results percentage 88.55%.

**Keywords**: *Balanced Scorecard ; DJKN ; Monitoring ; Performance Measurement*



## INTRODUCTION

The Provincial DJKN regional office is a government organization under DJKN (Directorate General of State Assets) under the Ministry of Finance which carries out the task of coordinating, technical guidance, control, evaluation and implementation of tasks in the field of state assets, state receivables and auctions with the provincial working area. [1]. DJKN West Kalimantan regional office is an organization that is responsible for carrying out tasks according to the main tasks and functions in the work area of West Kalimantan Province, with the responsibility to complete activities carried out by individuals or groups in the value of their achievements to find out the results of these activities [2].

DJKN West Kalimantan Regional Office has a performance appraisal standard, the performance appraisal standard used is the Balanced Scorecard method. The Balanced Scorecard is used to measure performance through a predetermined work indicator, performance indicators in the form of inputs, outputs, benefits and impacts of a value to be achieved. [3].

The application of the Balanced Scorecard method in the performance management process at the DJKN West Kalimantan Regional Office still uses the manual method in implementing the Balanced Scorecard. The Balanced Scorecard method is a complete framework for translating the vision and mission into strategic goals with 4 perspectives [4]: finance, customers, internal business processes and learning or growth in an integrated manner. The four perspectives integrated in the Balanced Scorecard will help the company or organization achieve its

goals in accordance with the existing mission and vision [5].

Implementing an employee management system manually makes it difficult to view performance documentation in real time [6] Thus the Management Information System (MIS) application in the organization becomes an important basis in monitoring and developing employee resource capabilities [7]. A website-based monitoring information system can help generate real-time information [8] and can oversee the course of a job that is being or will be carried out [9]. This monitoring information system has specific objectives, including evaluating work, identifying problems, assessing work and knowing the suitability of work with job objectives [10].

Based on the background at DJKN, the West Kalimantan Regional Office still uses manual methods in monitoring and measuring employee performance and making the monitoring process not optimal. This study tries to implement the Balanced Scorecard method into a website-based information system to monitor and measure performance results in order to facilitate the performance monitoring process at the DJKN West Kalimantan regional office.

## METHOD

The method in this study uses the IS Research Framework. To explain the steps to be followed in this research, it can be seen in image 1. Image 1 is the framework used to conduct this research, the framework used contains 3 aspects, namely the environment, IS Research and the knowledge base.

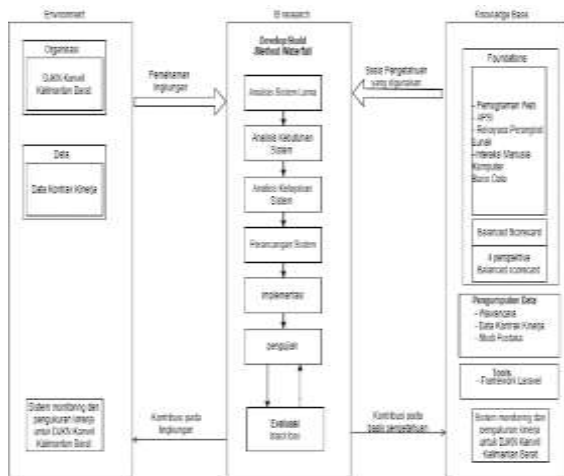


Image 1 IS research framework

**Research stages**

IS Research is an information systems research framework that has stages of analysis, design, implementation and testing [11]. At the analysis stage, it is carried out to analyze the problems that occur during the process from planning work programs to monitoring the results of the work plan, then the design stage is carried out to create a picture of what kind of system will be built , system design includes the design of diagrams and databases after the next design stage is carried out. the coding process is carried out to implement the designs that have been made, the last stage after the system is completed is the system testing process, the system testing uses the *black box method*, this test is useful to determine the suitability of the system with the design that has been made previously whether it runs according to needs .

**Environment**

In the environmental column are the parties involved in the research, both sources of data and information regarding the needs of this performance monitoring and measurement system. Meanwhile,

the user of this application is the Director General of State Assets of the West Kalimantan Regional Office who can use the features in this system to monitor and measure the performance in the office.

**Knowledge base**

In this section, the theoretical basis used in developing the system and the results of the research made to the knowledge base are written. This section also describes the tools used to build the system using *the Laravel framework* and techniques for data collection, namely:

1. Interview  
Conducting interviews with resource persons at the West Kalimantan Regional Office DJKN to obtain the information and data needed.
2. Documents ( Performance Contract Data )  
Performance contract data is a document regarding the performance contract required in this study which contains details of the work program and its completion targets.
3. Literature review  
Literature study is a technique of collecting data through library books and other libraries needed in this research.

**RESULTS AND DISCUSSION**

Discussion of the results of system implementation .

**Add Operator Work Plan Page**

Image 2 is an implementation of the interface design for the added work plan page, which is used by the operator to add work plan data.



Image 2 Page Add Operator Work Plan

**Interface page add realization of Work Plan**

Image 3 is the result of the implementation of the interface design of the added work plan realization page, which is used by the operator to increase the realization of the work



Image 3 pages added to the realization of the Work Plan

**Head office Dashboard Interface Page.**

Image 4 is the result of implementing the interface design for the head office dashboard page , which is used by the head office to be able to see the percentage of perspective data, work contracts and total performance indicators for all fields.



Image 4 Head Dashboard Interface Page

The process of calculating the *Balanced Scorecard method* uses the calculations applied at the DJKN Regional Office of West Kalimantan, the rules for the threshold value of the results of the work plan is 120%, if value Yields exceeding 120% will still be Written 120%.

Table 1 is a table of work plans for the General Sector, in the General field there are 7 work plans, the value of the results is obtained from the realization divided by the target, then to get the value of work indicators, work contracts and perspectives, calculations are carried out using the calculations used by DJKN.

$$1. \text{ indicator performance} = \frac{\text{Total results of work plans on the same}}{\text{number of work plans}}$$

a. 10a-N - Percentage development competence employee :

$$\frac{(100+100+100)}{3} = 100$$

b. 9a-CP - Percentage act carry on agreement agreement management assets :

$$\frac{125}{1} = 125 = 120$$

c. 4a-N - Average index accuracy time solution service riches country :

$$\frac{104.651}{1} = 104,651$$

d. 2a-N - Index Satisfaction User Service Regional Office and KPKN :

$$\frac{108.696}{1} = 108.696$$

e. 11a-N - Value Fulfillment of Work Units to ZI criteria towards WBK/WBBM\* :

$$\frac{100}{1} = 100$$

From the above calculations, the final results can be obtained on the KPI dashboard as shown in image 5



Image 5 KPI chart

2. Contract work

$$\frac{\text{(Total value of performance indicators in the same)}}{\text{number of performance indicators}}$$

a. Competent HR :

$$\frac{(10a-N)}{1} = \frac{(100)}{1} = 100$$

b. Effective Supervision And Control :

–

$$\frac{(9a-CP)}{1} = \frac{125}{1} = 125 = 120$$

c. Management quality service : \_

$$\frac{(4a-N)}{1} = \frac{104.651}{1} = 104,651$$

d. Bureaucracy and service an agile, effective , and effective public efficient :

$$\frac{(2a-N)}{1} = \frac{108.696}{1} = 108.696$$

e. A Fit-For-Purpose Organization :

$$\frac{(11a-N)}{1} = \frac{100}{1} = 100$$

From the above calculation, the final result can be obtained on the Work Contract dashboard as shown in Image 16.



Image 6 contract chart

3. Perspective

$$\frac{\text{Total value of performance indicators in the same}}{\text{number of work plans}}$$

a. Learning and Growth :

$$\frac{\text{(Competent HR+ Organization Fit-For-Purpose)}}{2}$$

$$\frac{(100+100)}{2} = 100$$

b. Internal Processing :

$$\frac{\text{(Effective Supervision And Control+ Quality service management)}}{2}$$

$$\frac{(125+104.651)}{2} = 114,8255$$

c. Customers :

$$\frac{\text{(Bureaucracy and public services are agile, effective)}}{1}$$

$$= \frac{108.696}{1} = 108.696$$

From the above calculations, the final results can be obtained on the Perspective dashboard as shown in Image 7

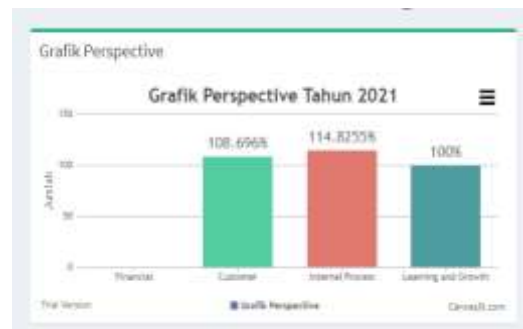


Image 7 perspective chart

Then for the other fields, the same calculation is carried out as the General Field calculation above.

Table 1 . General Sector Work Plan

<i>Perspective</i>	<b>Contract work</b>	<b>Indicator performance</b>	<b>Field</b>	<b>Plan work</b>	<b>Target</b>	<b>Realization</b>	<b>Results</b>
<i>Learning and Growth</i>	Competent HR	10a-N - Percentage of employee competency development	General	Personnel Development at KPKNL	100	100	100
<i>Learning and Growth</i>	Competent HR	10a-N - Percentage of employee competency development	general	Monitoring of Education and Training in the Context of Achieving KPIs to Fulfill Competency Development	100	100	100
<i>Internal Process</i>	Effective Supervision And Control	9a-CP - Percentage of follow-up on asset management approval approval	general	Monitoring the Submission of SPT, LP2P and LHKPN	80	100	125
<i>Internal Process</i>	Quality service management	4a-N - Average index of timeliness of completion of state wealth services	general	Monitoring the Implementation of Individual Performance Dialogue	86	90	104.65 1
<i>Customers</i>	Agile, effective, and efficient bureaucracy and public services	2a-N - Service User Satisfaction Index of Regional Offices and KPKN	general	Monitoring the Implementation of Behavioral Assessment, PPK PNS and KP4	92	100	108.69 6
<i>Learning and Growth</i>	A Fit-For-Purpose Organization	11a-N - Work Unit Fulfillment Value against ZI criteria towards WBK/WBBM*	general	Evaluation and Appointment of Position and Ranking of Implementers	100	100	100
<i>Learning and Growth</i>	Competent HR	10a-N - Percentage of employee competency development	general	Submission of Proposals for Employee Promotion and Retirement	100	100	100

**System Test**

**1. Functionality Test**

Functionality testing is a test that uses the Black Box method to ensure the system runs according to the design that has been made .

**2. User Acceptance Test**

User Acceptance Test is a test from the user's perspective that produces

the *output of* a document as evidence that the application made is accepted by the *user* and the test is considered to meet the needs of the user. This test was conducted through an online questionnaire and filled out by 12 respondents. Here are the results of the questionnaire:



Identifikasi	Deskripsi	Proses Pengujian	Metode	Kategori yang diharapkan	Hasil yang didapatkan	Kesimpulan
1. P001.PJ - SIMK - 001	Mengujian fungsi Log in	User klik tombol Username-password dan menekan tombol login	Melakukan Data masukan dan password	User dapat masuk ke dalam sistem	User dapat melakukan login dan masuk ke halaman utama	Berkah
2. P001.PJ - SIMK - 002 (1)	Mengujian fungsi Tambah Data operator	Admin melakukan tambah data operator	Melakukan operasi operator dan menyimpan data	Admin berhasil menambah operator baru	Admin dapat menambah user operator baru	Berkah
3. P001.PJ - SIMK - 002 (2)	Mengujian fungsi Edit Data operator	Admin melakukan edit data operator	Melakukan edit operator dan menyimpan data operator	Admin berhasil mengedit dan menyimpan data baru operator	Admin berhasil mengedit operator	Berkah
4. P001.PJ - SIMK - 003 (01)	Mengujian fungsi Lihat Data operator	Admin melakukan lihat operator	Admin memilih tampilan data operator	Admin dapat melihat index operator	Admin berhasil melihat index data operator	Berkah
5. P001.PJ - SIMK - 003 (04)	Mengujian fungsi Hapus Data operator	Admin melakukan hapus data operator	Admin melakukan hapus operator	Admin dapat menghapus data operator	Admin berhasil menghapus data operator	Berkah
7. P001.PJ - SIMK - 002 (05)	Mengujian fungsi Tampilkan Data kepala bidang	Admin melakukan tampilkan data kepala bidang	Admin menampilkan data kepala bidang menyimpan data	Admin dapat menampilkan data kepala bidang baru	Admin berhasil menampilkan data kepala bidang	Berkah
8. P001.PJ - SIMK - 002 (06)	Mengujian fungsi Edit Data kepala bidang	Admin melakukan edit data kepala bidang	Melakukan edit kepala bidang menyimpan data kepala bidang	Admin dapat mengedit dan menyimpan data baru kepala bidang	Admin berhasil mengedit kepala bidang	Berkah

Images 8 . Functionality Testing samples

No	Butir Uji	Baik sekali	Baik	cukup	kurang	Kurang sekali
1	Kemudahan dalam menjalankan aplikasi SIMK	6	6			
2	Kelancaran menjalankan aplikasi SIMK	5	7			
3	SIMK mudah dijalankan dengan perangkat pengguna	4	8			
4	Kelulusan perpindahan tiap halaman pada aplikasi SIMK	5	7			
5	Kenyamanan dalam mengakses SIMK secara keseluruhan	6	6			
6	Proses unggah data ( foto profil atau file rencana kerja )	4	8			
7	Kemudahan menginputkan data	4	8			
8	Kemudahan dalam melihat detail data	5	6	1		
9	penggunaan kombinasi warna pada aplikasi	6	6			
10	Bentuk font pada aplikasi (kemudahan dalam pembacaan)	8	4			
11	konsistensi tampilan setiap halaman	6	6			
12	Menu didalam aplikasi mudah dikenali	6	6			
13	simbol-simbol didalam aplikasi mudah dipahami	5	7			
14	Respond feedback aplikasi terhadap input yang dilakukan ? ( bisa pop up atau keterangan )	3	9			
15	Tampilan form input data	5	7			
Jumlah		78	101			

Images 9 . User Acceptance Test Results

Based on the results of software testing, the results of the questionnaire were calculated using a Like scale, to obtain conclusions about the overall software assessment.

$$\text{Total Score} = T \times P_n$$

Information:

T = Total Respondents

Pn = Score for each answer

Y = Highest score x Total respondents x number of questions

The following is the score ( Pn ) for each answer choice:

**Very Good** = 78,

$$\text{Total score} = 78 \times 5 = 390$$

$$\text{Good} = 101, \text{ Total score} = 101 \times 4 = 404$$

$$\text{Enough} = 1, \text{ Total score} = 1 \times 3 = 3$$

$$\text{Not enough} = 0$$

$$\text{Less Once} = 0$$

$$Y = 5 \times 12 \times 15 = 900$$

$$\text{Final Settlement} = \left( \frac{\sum \text{total score}}{Y} \right) \times 100$$

$$= \left( \frac{797}{900} \right) \times 100 = \mathbf{88.55\%}$$

Then the results that have been calculated can be recalculated to get the value interval, so that the information is obtained for the value category. The formula for finding intervals is as follows :

$$I = 100 / \text{Total answer choices}$$

$$I = 100 / 5 = \mathbf{20}$$

Then the interval value for each answer is 20, the following is the range of interval values for each answer:

$$\text{Very Good} = 80\% - 100\%$$

$$\text{Good} = 60\% - 79.99\%$$

$$\text{Enough} = 40\% - 59.99\%$$

$$\text{Less} = 20\% - 39.99\%$$

$$\text{Very less} = 0\% - 19.99\%$$

The results of the Likert scale calculation are worth 85.55% with the numbers obtained, the test results on the respondents fall into the category of very good scores.

## CONCLUSION

From the results of this study, it can be concluded that the use of the Balanced Scorecard method to measure employee performance at DJKN West Kalimantan can be applied and implemented because the target indicators and employee performance achievements are in accordance with the indicator values in the Balanced Scorecard (covering into 4 perspectives (customer, financial, internal processes

and learning and growth) and the implementation of this method into a website-based system makes its use easier and more efficient so that it can help the West Kalimantan Regional Office of DJKN to measure employee performance easily, quickly and in real time.

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