The Effect of the Covid-19 Pandemic on Lecturer Productivity by Functional Position

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Abstract. The purpose of the study was to analyze the effect of the COVID-19 pandemic on lecturer productivity based on functional positions. The research case study conducts at the Faculty of Economics, State University of Semarang. Respondents amounted to 129 lecturers who were divided based on functional positions. Collecting data is a questionnaire and analysis tools used Multivariate Analysis of Variance (MANOVA). The results of the study show that there is a significant difference in the productivity of lecturers who did Work from Office (WFO) and Work from Home (WFH) before and during the Covid-19 pandemic among lecturers who held functional positions as head lectors and teaching staff (not yet have a functional position). Providing motivation, especially for teaching staff related to career paths, must be carried out continuously and sustainably. Planning and mapping human resources according to competencies are essential through lecturer competency training.

Keywords: Productivity · lecturer · training · human resources · MANOVA

1 Introduction

The coronavirus disease-2019 (covid-19) outbreak began to occur in the last quarter of 2019, and until now, it has not been entirely resolved in various countries. Large-Scale Social Restrictions/PSBB to lockdown are schemes to prevent more comprehensive transmission. One of the consequences of the PSBB is working from home (WFH). The education sector is one of the sectors that implement WFH. The Minister of Education asked teaching staff, including lecturers, to carry out activities from home or Work from Home (WFH). All activities of the Tri Dharma College, such as teaching, guiding, and testing, must be done online (online). This condition is reinforced by the Circular Letter of the Minister of State Apparatus Empowerment and Bureaucratic Reform (MENPANRB) Number 19 of 2020 concerning Adjustment of the Work System of State Civil Apparatus in Efforts to Prevent the Spread of Covid-19 in Government Agencies. This regulation stipulates that the State Civil Apparatus (ASN) within the government agency can carry out official duties by working at home or in their respective residences.

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Table 1. Targets and Realization of Academic Performance in 2020

Indicator	Target	Realization
Number of research results registered Geographical Indications	2	1
Number of multidisciplinary research	8	3
Internationally funded proposal	4	1
Number of applied research results	2	3
Number of scientific publications resulting from service activities in proceedings	9	4
Number of scientific publications resulting from service activities in journals	10	4

Source: Buku Raker FE UNNES 2021

WFH is a challenge in remote teaching and learning activities in managing classes that are carried out remotely, and lecturers or other teaching staff must be able to distinguish it from e-learning [1, 2], Sepulveda, et al. [1].

As a State Civil Apparatus (ASN), teaching staff or lecturers must continue to be productive even during a pandemic. Many studies have been conducted both abroad and domestically on the determinants that affect productivity. According to Yusaini and Utama [3], the competence of the teaching staff influences productivity. During the pandemic, several studies on productivity have also been carried out. Gender is one of the determinants highlighted in work productivity in the eyes of universities. Differences in wages and workload [4–6]. On average, women take on work to take care of children, housework, and other household responsibilities, and women tend to be more affected by the lockdown than men [7, 8]. This makes female academics more likely to multitask between research and other homework, which causes the efficiency of researching to be lower than before the pandemic [7]. This is supported by research conducted on journal editors with an increase in research submissions in journals after the pandemic by 20–30 percent, which was dominated by male researchers and not many female researchers compared to before the lockdown [9, 10].

The lecturers considered heavy things are research activities and community service because even though WFH, the performance of these two elements must continue. From the data in Table 1, at the Faculty of Economics, Unnes, the realization of the research and service indicators failed to achieve the expected target.

From six indicators, only 45.71% (16) were achieved from the total of 35 indicators. This of course will affect the performance of the institution in general and the performance of lecturers in particular. Factually, some previous studies have been carried out regarding the productivity of lectures and teaching staffs during the WFH working system implemented [11–16], However, there was no study of the productivity of lectures and teaching staff based on functional positions yet.

According to the Higher Education Service Institute (LLDIKTI), functional positions are important for lectures and teaching staffs because of the differences in the duties, responsibilities, authorities and rights of a lecturer in a higher education unit which

in its implementation is based on certain expertise and is independent. Lecturers and teaching staffs, especially mastery of technology during the pandemic has become a major requirement. Thus, a person's level of openness to technology is also a major determinant of productivity during the pandemic. According to Christian et al. [17] a situation causing a person unable to adapt to technology and use it in a healthy manner is called technostress. Technostress factors are influenced by techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty [18–20].

Therefore, it is important to conduct research related the productivity of teaching staff and lecturers seen from functional positions. This is vital because the demands of the lectures and teaching staff regarding the output of the Tri Dharma of Higher Education must be achieved regardless the current issue which has forced lectures and teaching staffs work from home. Hence, the performance and achievements of lecturers and teaching staff must be maintained to avoid the decrease of motivation and stress because during WFH, the work quality and efficiency are difficult to control [21–23] s This study is expected to identify the differences of the performance made by different function levels of the staffs. Identifying the differences will lead to possibility to facilitate the right way to ease the process of adaptation and adjustment at each institution. The importance of this research is related to the monitoring of Permenristekdikti No. 20 of 2017 concerning the granting of the Associate Professor Progression Allowance and the Professor's Honorary Allowance.

2 Literature Review

2.1 Productivity

Productivity is the efficiency of producing goods and services with specific measures. In the theory of marginal productivity, it states that the company is willing to buy or pay a productive agent if the agent contributes to the company's profits [24]. Productive agents in the form of human resources can contribute to the company if the agent has bargaining points such as education, technological expertise, and other things that support labor productivity. The relationship between productivity and labor quality has been widely studied, one of which is in the field of education in universities by evaluating research productivity on lecturers who determine the quality of training and positions at universities [25, 26]. The number of scientific publications assesses the objectivity of the assessment of lecturer productivity, the number of book publications, the number of postgraduate students graduating thanks to his guidance, research assistance received as project leaders, average citations per publication, and quality in teaching [27–31].

The COVID-19 pandemic has changed the productivity of various sectors of the economy. The sectors affected are low-productivity sectors full of face-to-face activities, such as the food, retail, tourism, and people transportation sectors [32–34]. This is indicated by the decline in total factor productivity in the private sector in the United Kingdom by four percent during the pandemic [33]. Declining activity occurred in other sectors such as education. The point of view of the education sector is divided into the point of view of teachers (lecturers, teachers, mentors), students, and teaching staff. The influence that occurs in the education sector states that there are many constraints faced in carrying out activities during the pandemic, considering that the education sector is

one sector that is full of face-to-face meetings. These constraints include barriers to internet access, job insecurity, and inequality in adaptation to the education system [35–38]. This study focuses on changes in the productivity rhythm experienced by lecturers in higher education. In the literature review, we avoid using previous research related to primary education because of differences in teaching aspects, especially the obligations of lecturers in the Tri Dharma of Higher Education.

Lecturer productivity is affected by the pandemic. The influences given include changes in the rhythm of teaching, research, and community service per the Tri Dharma of Higher Education. The shift in the rhythm of the lecturer's work has a high dependence on the internet. Previous research has examined that professional competence and personality are essential requirements for the online teaching and learning process. The need for lecturers who will always be face-to-face with a computer/laptop/tablet screen requires enough sacrifice to make lecturers comfortable for a long time [39]. The same research examines lecturer productivity which is then assessed from the rubric of assessment based on pedagogical, social, professional, and personality competencies using Partial Least Square (PLS) and the Structural Equation Model. Face-to-face and online differences lead to changes in lecturer productivity, one of which is through the use of online teaching aids [40–43].

2.2 Lecturer Responsibility During Pandemic

According to Law of Indonesia number 14 of 2005 concerning teachers and lecturers and Government Regulation of Indonesia number 37 of 2009 concerning lecturers, Lecturers are professional educators and scientists with the task of transforming, developing, and disseminating science, technology, and art through education, research, and community dedication. During pandemics, activities and obligations of lecturers do not stop immediately because the learning and teaching process must still run according to the syllabus that was agreed upon at the beginning of the lecture. [44, 45].

During a pandemic, the obligation of lecturers to carry out teaching, research, and service obligations is still the same. Only during the COVID-19 outbreak, all these obligations are carried out remotely. The researchers then examined the obligations of lecturers during a pandemic [46–48]. Several researchers analyzed the obligations of lecturers using qualitative and quantitative data, which were then converted using analytical tools such as thematic analysis [49] and qualitative research using open-ended questions to respondents [50]. The result is that the researchers found the same problem with the lecturers during face-to-face meetings. Research states that each discipline has different problems.

The obligation of lecturers during the pandemic is a challenge, especially for lecturers who have subject obligations related to practicum and laboratory assistance. In addition, lecturers are prone to burnout with online lectures and other obligations which are finally done online. Burnout causes a decrease in the quality of lecturers in carrying out their obligations as lecturers, researchers, and community assistants [51–53]. This linkage ultimately creates a relationship of quality human resources with all the obligations they have that can influence the workplace [54], namely the lecturers and the campus as the work environment.

3 Methodology

The design of this research is descriptive quantitative research. The population of this study is the teaching staff at the Faculty of Economics, UNNES, amounting to 129 people. The sampling technique is a survey so that all members of the population will be respondents in this study. The Multivariate Analysis of Variance (MANOVA) analysis technique was carried out to examine the average difference for more than two independent groups, namely the functional positions of Professors, Associate Professors, Assistant Professors (Lektor), Assistant Professors (Asisten Ahli), and Lecturers on productivity as measured by publications in the form of outputs. Internationally reputable, international publications, nationally accredited, national DOAJ, national regularly, and Intellectual Property Rights (HAKI) when working from office (WFO) and when working from home (WFH). The teaching staff in this study are Civil Servant candidate (CPNS) lecturers who have been accepted as lecturers at the Faculty of Economics but do not yet have functional positions because they do not meet the requirements to become Civil Servants (PNS) and retired lecturers who are contracted to become lecturers at Faculty of Economics even though no longer has a functional position. The hypotheses to be tested are:

H0 = There is no difference in productivity between the four categories.
H1 = There is a difference in productivity between the four categories.

The decision-making criteria are:

- H0 is rejected and H1 is accepted if the Levene test value is significant (probability < 0.05).
- H1 is rejected and H0 is accepted if the Levene test value is not significant (probability > 0.05).

To find the differences of the staffs' performance during WFH and WFO, the study applies the Bonferroni test and the Games-Howell test. The Bonferroni test is used if there is a similarity of variance in Levene's test p-value ($p > 0.05$). Generally, this test is used for the same and different sample sizes in each treatment. While the Games-Howell test is used if there is a different variance in Levene's test p-value ($p < 0.05$) and has an unequal sample size.

The results of this study support the research of Alipour et al. [55] which states that there is significant data on WFH capacity in specific professions and industries and the use of WFH in Germany. The results of this study focus on complex non-routine cognitive tasks that require creative and social intelligence such as teachers and lecturers associated with part-time and full-time WFH capacity, and it could be possible to apply in the future. This means that these types of work- mixed models of WFO and WFH can be implemented in office activities. Creative intelligence will be honed depending on the time and functional positions.

Several other studies have stated that the difference between WFH and WFO is obvious because it interferes with social interactions that are common in work [56], challenges to internet speed, network, and communication that can affect productivity [11, 57], and WFH is less productive for jobs that require creative problem solving and

work that requires teamwork [58, 59]. As a matter of fact, teamwork is built from the beginning of a career so that lecturers who have higher functional positions will have a better network of collaboration and team communication.

This study only focuses on distinguishing lecturer productivity based on functional positions without distinguishing gender. Gender according to Purwanto et al. (2020), (Bianchi et al., 2012; Cui et al., 2020), (Cui et al., 2020), (Beck, 2020; Kitchener, 2020) is an important factor influencing productivity in the pandemic. Hence, further research could combine functional positions and gender as a factor that distinguishes lecturer productivity during pandemic from a work system based on WFH or WFO.

4 Conclusion

This study aims to see the productivity of lecturers based on functional positions during work from office and work from home. The results show the difference in productivity which happened for associate professors with lecturers and assistant professors with lecturers. Meanwhile, for Professors and Assistant Professors, there is no difference in productivity when working from the office or working from home. This seems important to provide continuous motivation related to productivity, especially for lecturers with functional positions at the lowest level who are relatively new as lecturers and do not yet have yet creativity and social intelligence as those who already have higher functional positions.

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Dyah Maya Nihayah: Conceptualization, software, visualization, and supervision.
Arumawan Mei Saputra: Formal analysis, validation, and project administration.
Nadia Damayanti: Software and validation.

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