

## **EXPLORATION OF MULTI MEETING, MULTITASKING AND MEETING FATIGUE TO PRODUCTIVITY**

**Anita Maharani, Selvia Marlika, Triyanti, Thenry Linda Sharron Pandu**

Bina Nusantara University, Jakarta, Indonesia

### **Article Information**

Received: 8 September 2021

Accepted: 29 September 2021

Published: 15 October 2021

DOI: 10.33555/embm.v9i1.201

### **Corresponding Author:**

Anita Maharani

Jakarta, Indonesia

Email: anita.maharani@binus.edu

ISSN 2338-8854

eISSN 2620-9918

### **ABSTRACT**

*This study aimed to see the effect of multi-meeting, multitasking, and meeting fatigue on productivity. The context of this study is during the COVID-19 pandemic, where phenomena related to multi-meeting, multitasking, and meeting fatigue were entirely natural. The literature used is related to multi-meeting, multitasking, and meeting fatigue, as well as productivity. We elaborate on several pieces of literature before the pandemic, and this study emerges from the results of studies during the pandemic. This research method refers to a quantitative approach, which aim to explore whether there is a relationship between variable; we conduct analysis using PLS-SEM, and thorough this approach, researcher conducts a reliability test by looking at CR and AVE, a validity test by looking at discriminant validity, and finally, conducting a path analysis by looking at the results of P-Values. This study indicates that meeting fatigue does not negatively affect productivity; multitasking has a positive effect on productivity, meeting fatigue can affect productivity when there are multi meetings as moderators, and multitasking affects productivity when there are multi meetings as moderators.*

**Keyword:** *Meeting Fatigue, Multi Meeting, Multitasking, Productivity*

## 1. Introduction

The worldwide COVID-19 epidemic that began in early 2020 sparked numerous researches, particularly on behavior. The employees were directly affected by the changes, especially the problem of how to work, known as the Flexible Working Arrangement, since it was done not at the workspace (office), but rather at home (Stefanie et al., 2020; Driyantini, 2020). Govender et al., (2018) discovered a strong connection between individual performance and flexible working options in their research.

According to Herjanto (2007), productivity measures how effectively resources are handled and used to produce optimum outcomes. During the COVID-19 pandemic, Mustajab et al. (2020) found that workers were less productive since they worked from home. Thus, the circumstance affects production.

Working in the pandemic age necessitates changes for both employers and workers, and businesses are increasingly allowing employees to work from home (WFH) (DeFilippis et al., 2020). During the pandemic, unexpected changes forced businesses to establish rules regarding working from home, which impacted organizational coordination procedures, decision-making processes, and productivity. Working remotely in a pandemic requires technology, such as virtual meetings (Cao et al., 2021).

Working remotely from the office using technology requires more digital multitasking or the capacity to accomplish several things using digital media. Due to work pressures, individuals use digital devices (e.g., laptops, phones, tablets) and apps (e.g., email, browser, documents) during a pandemic, which has significant health concerns.

Focusing attention is complex, particularly during meetings, according to Petrova et al. (2019). Work routines affect meeting

participants and are constantly conducted (multi meetings), even while other work is done (multitasking). According to prior research, current information technology platforms allow and induce multitasking. Multitasking behavior is characterized by the urge to launch several apps on a digital device, switch between tasks, and interrupt work.

According to Nelson in Luong and Rogelberg (2005), meetings are essential for organizational life. When a business adopts a virtual meeting policy, it is to help workers coordinate their work. However, Mosvick and Nelson (1987) point out that meeting activities have costs, notably the frequency and duration of meeting time, which has risen in recent decades. In a famous Mintzberg (1973) study, managers spent 69% of their time in meetings. In their famous research, Mosvick and Nelson (1987) found a threefold increase in meeting activity compared to the 1960s. A study of 1,900 company executives by Tobia and Becker (1990) showed that approximately 72% of business leaders spent more time meeting. However, with the advancement of technology and internet participation, meeting or meeting activities have grown more efficient and user-friendly. According to Parthasarathi et al. (2016), virtual meetings mean saving time and resources and reaching meeting participants wherever they are situated.

In this research, multi-meeting considers as a threat to productivity. Luong et al. (2005) observed an increase in meeting frequency and duration, affecting both workers and employers. Although meetings may assist in accomplishing productivity objectives, having too many meetings and spending too much time in meetings per day might cause weariness. It affects productivity. Multitasking, within many meetings, and meeting fatigue's as it suspected impact the productivity. The researchers then studied multi-meeting burdens, including multitasking and everyday well-being variables, includ-

ing tiredness and workload perceptions. On the other hand, on other side of the world, if we look at academic setting Morris (2020) found, when students lose concentration while listening to a teacher describe a topic, they become "Zoom fatigued" and "Zombies." However, there has been little study on meeting fatigue and multi-meeting behavior in people and groups: organization, weariness (fatigue) that develops, which ultimately affects productivity.

Based on the preceding explanation, the study questions are: 1) Does meeting weariness impact productivity? 2) Does multitasking affect productivity? To investigate the effects of meeting fatigue, multitasking, and multi-meeting on productivity and the function of multi-meeting as a moderator between meeting fatigue and multitasking.

## 2. Literature Review

The researcher uses literature to help build hypotheses and research models to discuss the phenomena in the background section. The following presentation will be related to the research objectives. Within the company, meetings are part of everyone's routine activities at work and become a necessity for everyone who needs to coordinate with others to complete work, discuss a topic, and become a medium for making decisions and policymaking in an organization.

To the situation in the world, namely the COVID-19 pandemic, everyone urges to do different ways of working, including meetings, the purpose of which is to minimize the transmission of COVID-19. The different way is where meetings before the pandemic can conduct face-to-face meetings. However, things change during the pandemic. Almost every activity must turn in a virtual way, either through video calls or often called conference calls, namely video conference meetings using applications such as Zoom, Google Meet, Microsoft Teams, and many others.

In general, many life changes have occurred because of the pandemic (Baker and Murphy, 2021). The changes felt by people who work are the reduced physical presence for meetings and the use of computers as media in meetings, which presents many opportunities for multitasking.

On the other hand, conducting a meeting process that takes too long using technological devices, especially video conferencing applications, can cause fatigue. In this study, it is called fatigue. Other research also shows that meeting fatigue is based on a thematic analysis of qualitative responses, where quantitative data is collected hourly for five working days from 55 employees who work remotely due to the COVID-19 pandemic. Video conferences beyond the limits of what one can tolerate will cause fatigue (Bennett and Bennett, 2021). The study of Bennet et al. confirms the study of Hülshager (2016) that ordinary people will experience fatigue. However, each morning it will decrease, reach the limit around noon and then increase until bedtime. In addition, daily sleep quality explains variations in the trajectory of individual fatigue changes. When sleep quality is low, the next day's fatigue decreases between morning and noon and increases until bedtime. When sleep quality is high, fatigue remains stable until midday and increases between work hours and bedtime.

Apart from meetings, multitasking can occur while working, mainly impacting productivity per person; special consideration for multitasking during meetings can also impact other colleagues and their productivity at work (Cao et al., 2021). Inappropriate activities (such as checking personal email or doing unrelated work) call as distracting and detracting from the purpose of the meeting. These unrelated activities can give the illusion of personal productivity to meeting participants.

The phenomenon that occurs during virtual meetings, using technology applications, is

vulnerable to problems, namely the possibility of affecting productivity. Multitasking is a critical behavior because it is closely related to productivity, fatigue, employee well-being, attention and focus, and prospective memory. Multitasking during meetings can also affect other people and their productivity (Cao et al., 2021). Cutrell et al. (2000) and Monk et al. (2002) stated that multitasking could increase productivity. Apart from the fact that meetings and related matters can help achieve work-related goals (productivity), holding too many meetings and spending too much time in meetings per day can harm individuals, especially fatigue (fatigue), which also affects productivity.

*H1: Meeting fatigue negatively affects productivity*

*H2: Multitasking positively affects productivity*

During meetings, participants experienced a lack of concentration, which according to Niemantsverdriet et al. (2017), was caused by participants performing other tasks or activities known as multitasking and motivates researchers to investigate what causes multitasking. Cao et al. (2021) confirm the findings of Niemantsverdriet et al. (2017). Multitasking reduces the capacity to execute the duties provided ideally. The human brain is limited in handling information relevant to cognitive skills concurrently. Researchers opposing multitasking claim the human brain can only focus on one thing at a time (Robinson and Stubberud, 2012).

Another research by Cameron et al. (2018) discovered that participants use several digital devices simultaneously during meetings. The rise in meeting activities utilizing technology is widespread. Thus, it is common for participants to perform other things during a meeting.

Toney et al. (2021) used the term Zoom fatigue, which is related to meeting fatigue,

to describe the state of individuals who spend much time in front of a computer screen. Morris (2020) used the zoom fatigue phenomena to depict the scenario that happened at the start of the COVID-19 epidemic among educators in one of the world's major newspapers. The tiredness phenomenon is well accepted, mainly when numerous tasks perform in front of a computer over a lengthy period.

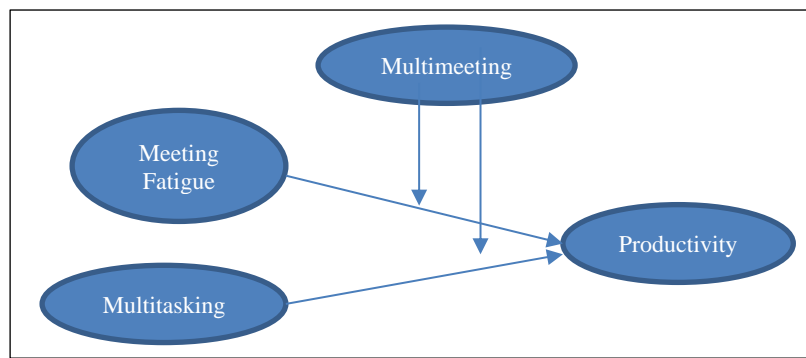
As a result of not paying attention to meeting activities, not being able to react immediately, and being confused to digest all information generated from concurrent meeting activities, according to Marchewka et al. (2020), multitasking adds 15% to work time. Furthermore, Hall, Leung, and Li (2015) discovered that multitasking may negatively impact people since it decreases individual originality and that multitasking under time constraints can negatively impact performance and productivity.

*Multitasking* as circumstances in which people focus on several activities at once. The issue is that executive variables, particularly obstacles, working memory, and cognitive flexibility, affect each individual's multitasking capacity. Interestingly, multitasking is sometimes inevitable due to the need to start or continue a task while other activities are in process or are due. Multitasking is also regarded as a technique to tackle the pressures that come with multi-meeting. (Adler and Benbunan-Fich, 2011)

There are some studies explore the effects of multitasking on performance (Peifer and Zipp, 2019). They discovered a direct impact of multitasking on performance. More study is needed to determine if multitasking happens when conducting several meetings simultaneously and whether the results are good or bad.

*H3: Meeting fatigue affects productivity with the multi meeting as moderator*

*H4: Multitasking affects productivity with the multi meeting as moderator*



**Figure 1.** Research Model

### 3. Research Method

This study gathers data using a survey technique to collect quantitative and qualitative data from different research topics utilizing survey instruments such as questionnaires and interviews (if needed). A cross-sectional survey is characterized and gives essential information to study populations since the time horizon chosen is cross-sectional (Fink, 2014).

This study's environment is also natural. This study's unit of analysis is workers who frequently participate in online multi-meetings. Finally, it is cross-sectional from the temporal horizon due to the researcher's limited time. To learn more about what occurred in this study, researchers polled office workers at different levels. Marchewka et al. (2020) use this approach to offer an in-depth examination of a subject. For descriptive research, a sample of at least 100, while for correlational studies, a sample of at least 50 is suitable to establish a relationship, and for experimental and casual comparative studies (Fraenkel et al., 2012).

Work from home (WFH) and work from office (WFO) questionnaires were gathered through google form and sent to different companies and sectors. The pre-questionnaire was sent to 40 respondents with four open-ended questions to investigate the connection between variables (elicitation stage), then the items or indicators utilized. Following the pre-questionnaire, two

Human Resource professionals as consultants to verify the items were suitable.

After the items are approved, the following stage tests their validity with people similar to the people being assessed or studied. The elicitation technique pre-questionnaires spread to about 50 respondents from different employment, residence, and other backgrounds. Finally, we turned the pre-questionnaire into a follow-up survey, we expect it could go back as we calculate sampling adequacy. In general, the sample size should be five times the number of variables investigated (Hair et al., 2014). According to the guideline above, the sample size for this research is at least  $5 \times 27 = 135$  respondents, based on the findings of elicitation and expert validation phases. Respondents are in general open by gender, age, years of service, education, or position. We follow Hair et al. (2014) but within one week, we received 370 responses. Although the problems mentioned are deemed relevant to the present situation, researchers need to conduct studies linked to measuring items—the collected measurement items to measure variable relationships.

There is a need to measure representative measuring items before data collection. So, in this study, data collecting took place in two phases. This step is thorough via the distribution of open-ended question questionnaires; then, the second stage distributes questionnaires from elicited items to responders for hypothesis testing purposes.

In the first step, the researcher employed basic elicitation to investigate the variables' relationships (considering the limitations of conducting FGDs and interviews). Researchers consider judgmental sampling while determining sample size. The researcher then chose to use 40 known responders. For example, how frequently do respondents conduct meetings in one day? How long is the duration? What do respondents know about the four evaluated factors: multi meeting, multitasking, tiredness, and productivity? What factors affect and promote the occurrence of these four variables? "What impact do actions have on all variables?"

First, the researcher used item analysis, grouping the respondents' responses into "item statements." However, the researcher must validate the data collected from the respondents. Therefore, the next step is to submit the results to specialists for expert validation. Specialists must next validate the elements classified by the researcher as "suitable" or "incompatible." Expert validity includes two academics with knowledge of Human Resources. Experts say all things are acceptable.

Post-stage 1, the researcher moved on to stage 2, delivering questionnaires to the intended sample. In the second step, respondents will rate the statement items on a Likert scale. The Likert scale measures how strongly a person agrees or disagrees with statements (Sekaran and Bougie, 2016). After we receive responds, then next we need to calculate, and we use SmartPLS software processes all data.

#### 4. Result and Discussion

The researcher received more replies than the goal of 50 in the first step because some responders passed on the researcher's message to their peers. The researcher used SPSS to assess the items' criteria validity. The validity criteria assist in determining whether there is a "disturbance" or if the suggested model fails to fulfil expectations.

The findings show that the items used to measure the suggested variables are legitimate; the initial step is factor analysis to assess the study's validity. The overall value of the standard deviation shows a smaller value than the mean, which shows that the mean value acts as a representation of the entire data (Table 1).

**Table 1.** Descriptive Analysis Result

	Mean	Std. Deviation	Analysis N
MM_1	3.2200	1.37455	50
MM_2	2.8400	1.41940	50
MM_3	3.9000	1.07381	50
MM_4	3.9000	1.21638	50
MM_5	2.8800	1.39445	50
MT_1	3.8000	1.16058	50
MT_2	3.8400	1.14927	50
MT_3	3.8400	.97646	50
MT_4	3.9600	.96806	50
MT_5	3.7400	.98582	50
MT_6	3.7600	1.04119	50
MT_7	4.0000	.92582	50
MT_8	3.9000	.88641	50
MF_1	4.1000	1.01519	50
MF_2	3.9200	1.15776	50
MF_3	3.5600	1.14571	50
MF_4	3.9200	1.00691	50
MF_5	3.9400	1.09563	50
MF_6	3.7400	1.06541	50
MF_7	4.2400	.91607	50
P_1	4.3200	.58693	50
P_2	4.1600	.68094	50
P_3	3.8600	.83324	50
P_4	3.7400	.89921	50
P_5	4.2000	.53452	50
P_6	4.2200	.58169	50
P_7	4.3200	.55107	50

Inter-variables are said to be interrelated if the determinant is close to the value 0. The calculation results show that the Determinant of Correlation Matrix value of 0.0000000000000005287 is quite close to the value 0. Thus, the correlation matrix between the variables is interrelated.

The KMO and Bartlett Test figures are 0.645 with a significance value of 0.000,

which means the KMO value is above 0.5 and the significance is far below 0.05, so the existing variables and samples can be analyzed further using factor analysis the data is declared valid (Table 2).

**Table 2.** KMO and Bartlett's Test Result

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.645
Bartlett's Test of Sphericity	Approx. Chi-Square	1287.544
	df	351
	Sig.	.000

The communalities table (Table 3) shows that the overall item variable has a value above 0.5. The greater the value of the communalities of a variable, the closer it is to the variables formed.

**Table 3.** Communalities Result

	Initial	Extraction
MM_1	1.000	.797
MM_2	1.000	.838
MM_3	1.000	.688
MM_4	1.000	.560
MM_5	1.000	.851
MT_1	1.000	.752
MT_2	1.000	.831
MT_3	1.000	.832
MT_4	1.000	.770
MT_5	1.000	.669
MT_6	1.000	.697
MT_7	1.000	.726
MT_8	1.000	.711
MF_1	1.000	.783
MF_2	1.000	.819
MF_3	1.000	.745
MF_4	1.000	.839
MF_5	1.000	.717
MF_6	1.000	.790
MF_7	1.000	.726
P_1	1.000	.657
P_2	1.000	.836
P_3	1.000	.825
P_4	1.000	.838
P_5	1.000	.698
P_6	1.000	.715
P_7	1.000	.827

Extraction Method: Principal Component Analysis.

The chart (Table 4) shows that only 5 factors are created since only components 1 to 5 have eigenvalues above 1, while the remaining 22 factors have eigenvalues

below 1. The similarity of the variables' features indicates that they are grouped into specific categories.

**Table 4.** Total Variance Result

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.460	31.332	31.332	8.460	31.332	31.332	5.810	21.519	21.519
2	5.098	18.881	50.213	5.098	18.881	50.213	5.138	19.029	40.549
3	3.653	13.530	63.744	3.653	13.530	63.744	4.399	16.293	56.842
4	2.188	8.103	71.846	2.188	8.103	71.846	3.476	12.873	69.715
5	1.141	4.225	76.071	1.141	4.225	76.071	1.716	6.356	76.071
6	.911	3.373	79.444						
7	.741	2.744	82.188						
8	.724	2.680	84.868						
9	.620	2.296	87.164						
10	.573	2.123	89.286						
11	.504	1.868	91.154						
12	.396	1.467	92.621						
13	.373	1.380	94.001						
14	.276	1.021	95.021						
15	.242	.895	95.917						
16	.212	.784	96.701						
17	.177	.655	97.356						
18	.136	.503	97.859						
19	.120	.443	98.302						
20	.114	.422	98.724						
21	.093	.345	99.069						
22	.065	.242	99.311						
23	.059	.219	99.530						
24	.054	.201	99.731						
25	.033	.121	99.853						
26	.026	.098	99.951						
27	.013	.049	100.000						

Extraction Method: Principal Component Analysis.

The next step is to identify the dominating components. Component Matrix table displays the distribution of items from produced factors. Complementary matrix comprising original items and generated factors the magnitude of the weighting factor for each item against the 1 factor matrix produced may be used to identify which item belongs to which factor.

The output results from Table 5., show the factor loading on the Component Matrix table for the five dimensions in the component column. For dimensions that have a high loading factor because  $> 0.5$ , then it is declared valid. However, dimensions with a low loading factor because  $< 0.5$  are declared invalid and need to be analyzed further.

**Table 5.** Component Matrix Result

	Component				
	1	2	3	4	5
MM_1	.558	.174	-.406	.539	-.006
MM_2	.589	.123	-.364	.582	.069
MM_3	.551	.009	-.151	.295	-.524
MM_4	.399	.029	-.328	.454	.293
MM_5	.567	.224	-.446	.530	.005
MT_1	.710	.139	-.401	-.259	-.010
MT_2	.784	.189	-.146	-.376	.136
MT_3	.794	.048	-.215	-.335	-.200
MT_4	.722	.151	-.153	-.435	.117
MT_5	.766	.091	-.176	-.079	.193
MT_6	.744	-.004	-.272	-.169	.204
MT_7	.786	.159	.040	-.277	-.069
MT_8	.709	.054	-.182	-.401	.108
MF_1	-.143	.789	.299	-.065	-.215
MF_2	-.262	.826	.196	-.145	-.095
MF_3	-.101	.845	-.084	.114	-.032
MF_4	-.100	.876	.215	.010	.120
MF_5	-.112	.824	-.084	.085	.103
MF_6	-.051	.887	.015	.004	-.024
MF_7	-.305	.773	.071	-.009	.174
P_1	.409	-.109	.637	.051	.261
P_2	.588	-.060	.668	.093	-.178
P_3	.704	.005	.499	.085	-.270
P_4	.751	.110	.349	.015	-.374
P_5	.543	-.062	.551	.310	.011
P_6	.524	-.046	.585	.105	.291
P_7	.355	-.030	.756	.173	.313

Extraction Method: Principal Component Analysis.

a. 5 components extracted.

Based on the Rotated Component Matrix Table 6, we may see the multi meeting variable (MM\_1 to MM\_5) correlate with component 4, multitasking variable (MT\_1 to MT\_8) is closely correlated with component 1, meeting fatigue variable (MF\_1 to MF\_7) is correlated closely with component 2. In contrast, the productivity variable (P\_1 to P\_7) correlate with component 3.

**Table 6.** Rotated Component Matrix Result

	Component				
	1	2	3	4	5
MM_1	.232	.042	.013	.839	.195
MM_2	.220	-.006	.091	.873	.139
MM_3	.220	-.090	.058	.422	.671
MM_4	.156	-.066	.066	.712	-.140
MM_5	.262	.085	-.018	.861	.184
MT_1	.806	-.011	-.085	.277	.136
MT_2	.884	.060	.168	.132	.028
MT_3	.830	-.090	.052	.123	.343
MT_4	.867	.031	.119	.058	.019
MT_5	.697	-.037	.217	.367	.000
MT_6	.748	-.139	.114	.323	-.040
MT_7	.750	.053	.299	.086	.251
MT_8	.831	-.067	.099	.079	.023
MF_1	-.064	.831	.085	-.191	.211
MF_2	-.059	.871	-.045	-.228	.046
MF_3	-.007	.833	-.138	.175	.038
MF_4	-.004	.903	.124	-.009	-.091
MF_5	.015	.815	-.117	.170	-.097
MF_6	.075	.880	-.057	.072	.041
MF_7	-.115	.812	-.074	-.042	-.217
P_1	.118	-.081	.792	-.051	-.077
P_2	.176	-.056	.802	-.035	.398
P_3	.311	-.031	.685	.073	.503
P_4	.430	.047	.537	.098	.595
P_5	.067	-.066	.774	.201	.223
P_6	.198	-.041	.815	.072	-.070
P_7	-.009	.019	.902	-.014	-.112

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Table 7 shows that in component 1 the correlation value is  $0.744 > 0.5$ ; component 2 correlation value  $0.982 > 0.5$ ; component 3 correlation value  $0.837 > 0.5$ ; component 4 correlation value  $0.772 > 0.5$ ; and component 5 correlation value  $-0.949 < 0.5$ . Based on these results, it can be said that

component 1 to component 4 is worth  $> 0.5$  then the four factors formed can be said to be appropriate in summarizing the 27 existing variable items, while component 5 because it is worth  $< 0.5$  then these factors cannot explain or summarizes the existing 27 item variables.

**Table 7.** Component Transformation Matrix Result

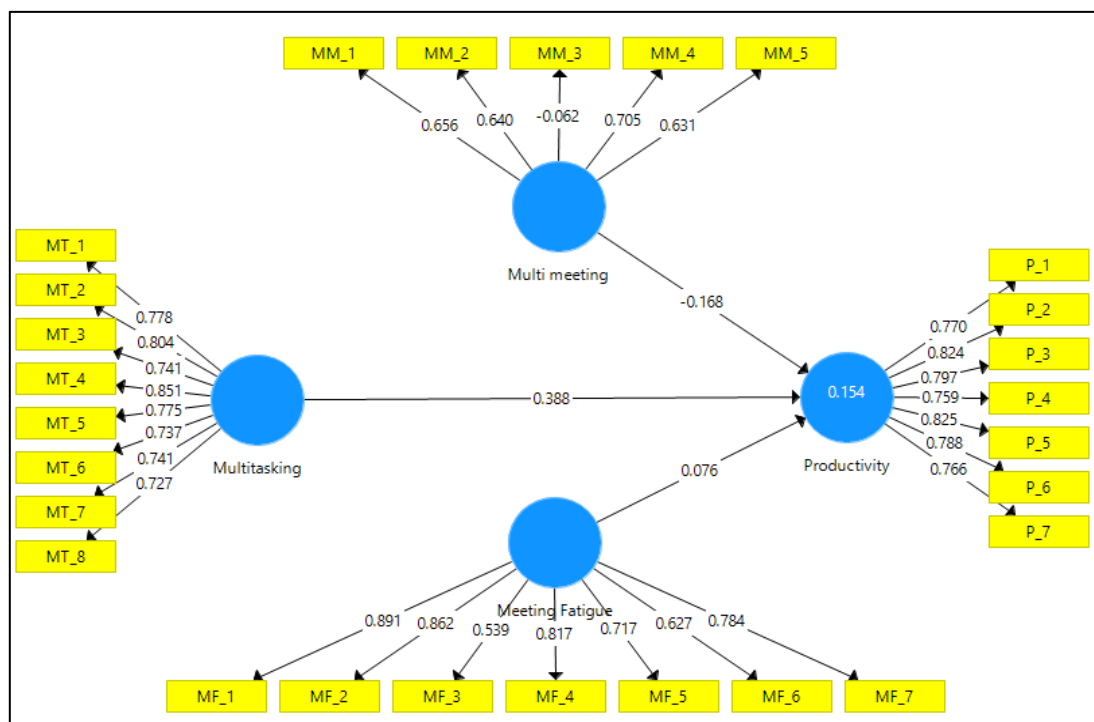
Component Transformation Matrix					
Component	1	2	3	4	5
1	.744	-.137	.444	.397	.270
2	.138	.982	-.048	.113	.033
3	-.268	.127	.837	-.450	.090
4	-.585	-.001	.214	.772	.128
5	.112	.008	.233	.178	-.949

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Based on the results of the factor analysis above, based on the KMO value results stating that our pre-questionnaire data is declared valid, a follow-up questionnaire with the target sample of this research is 370

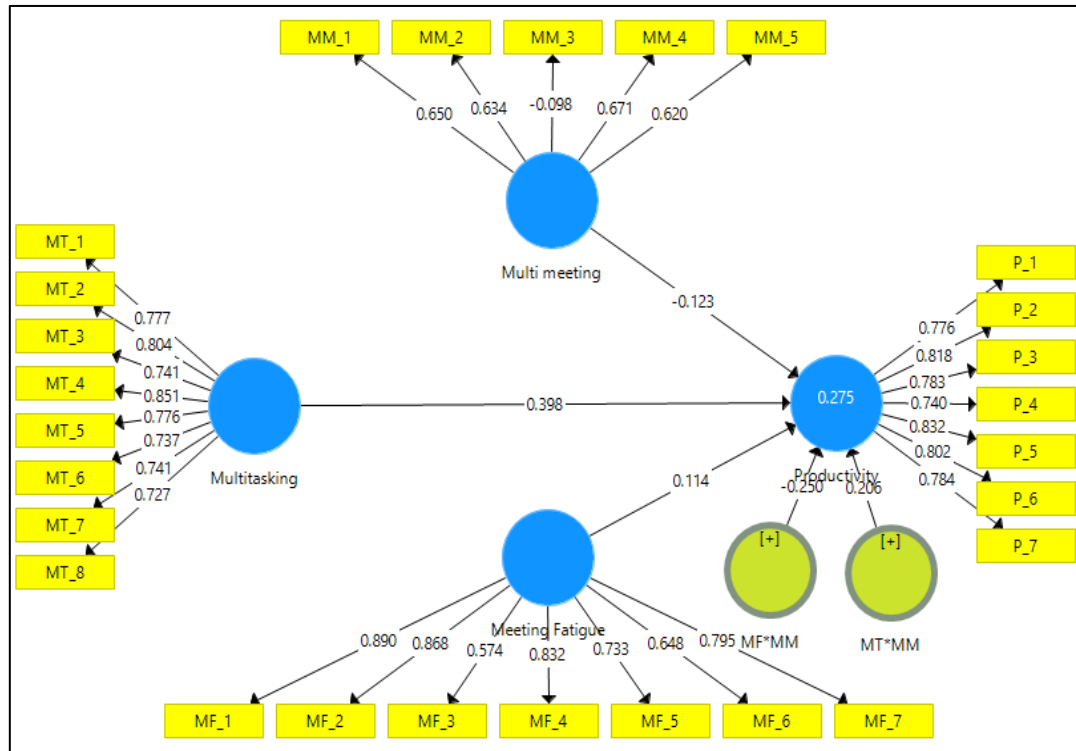
respondents. At processing large amounts of data and the Structural Equation Modeling model, the researcher uses SmartPLS for data processing.



**Figure 2.** Outer Model

After further data processing with a sample of 370 respondents and after doing some

exploration by using multi-meeting as moderator, a new model is more suitable.



**Figure 3.** Outer Model with Moderator Variables

By considering the hypothesis testing to be carried out and the reference to the statistical data processing, we try to answer the research problem by using Multi Dependent Regression Analysis. We process our data using PLS-SEM application (multifunctional software to test formative and reflective models with different indicator measurement scales (such as ratios, categories, Likert, and many more) in one model) considering that there are moderating variables.

In order to assess our hypothesis, we use multivariate regression analysis. First, we create a null model with the intercept as the only predictor. Predictors are in Models 1 to 4. We then compare models using Chi2-Difference-Tests. In order to assess Hypotheses 1 and 2, we perform multiple regression analyses. R-package mediation is used to analyze multi-

tasking. To exclude potential problems with non-normal data, we used tests of reliability, validity, normality, and homogeneity to analyze the data. We calculated a 95% confidence interval (CI) based on the simulation picture. Hypotheses 3-4 asses in other models. We added the person means as an additional predictor in the mediation model (Peifer & Zipp, 2019).

After obtaining a more suitable model, we carry out Construct Validity, namely validity, which is concerned with how far the test items can measure what they want to measure following a specific concept. Construct validity is related to abstract phenomena and objects, but the symptoms are observable and measured (Kusaeri, 2012). The following are the results of processing construct reliability and validity.

**Table 8.** Construct Reliability and Validity – Phase I

	Cronbach's Alpha	CR	AVE
MF	0,923	0,902	0,574
MM	0,886	0,669	0,348
MT	0,905	0,921	0,593
P	0,900	0,921	0,625

Before we discuss the results, MF stands for meeting fatigue, MM stands for multimeeting, MT stands for multi tasking and P stands for productivity, then CR stands for composite reliability and AVE stands for Average Variance Extracted. When we conduct first phase of construct of reliability and validity, we found that we

have problems within our outer loading, since results of MM's composite reliability is note suitable. We found two items should be excluded, one is MM3 and other is MF3. After we exclude those two item, then we re-calculate our construct reliability and validity.

**Table 9.** Construct Reliability and Validity – Phase II

	Cronbach's Alpha	CR	AVE
MF	0,913	0,923	0,668
MM	0,898	0,909	0,715
MT	0,905	0,921	0,593
P	0,900	0,920	0,623

The construct validity test in this study is one of the series of PLS-SEM analyzes carried out. The convergent validity parameter discussed in this section is the Average Variance Extracted (AVE) value. The expected AVE value is more than 0.5,

which indicates that more than half of the constructs explain the indicators (Hair, et al., 2017). The table above shows that the AVE value for multi-meeting and multi-tasking mediated by multi-meeting is less than 0.5.

**Table 10.** HTMT Criterion

	<b>MF</b>	<b>MM</b>	<b>MT</b>	<b>P</b>
<b>MF</b>				
<b>MM</b>	<b>0,093</b>			
<b>MT</b>	<b>0,116</b>	<b>0,471</b>		
<b>P</b>	<b>0,095</b>	<b>0,049</b>	<b>0,346</b>	

In addition, we also conduct a Discriminant Validity test. According to Henseler et al. (2015), a new criterion for assessing discriminant validity in variance is structural equation modeling. Also, it is by establishing discriminant validity assessments through the heterotrait-monotrait ratio correlation method (HTMT). This method uses a multitrait-multimethod matrix as the basis for measurement. The HTMT value should be less than 0.9 to ensure discriminant validity between the two reflective constructs. From the table above, it shows that the HTMT value for all item variables is  $< 0.9$ .

We need to see the value of R Square. The goodness-fit-model test in the PLS-SEM

inner model is reflected in R-Square. The coefficient of determination (R Square) is a way to assess how much an exogenous construct can explain an endogenous construct. The value of the coefficient of determination (R Square) expects to be between 0 and 1. R Square values of 0.75, 0.50, and 0.25 indicate that the model is robust, moderate, and weak (Hair et al., 2014).

Our result shows that our model is quite weak in illustrating phenomena we propose to raise. But however, though this is a sign whether our result might have a lower possibility to align with phenomena, we decided to continue our analysis further more.

**Table 11.** R-Square

	<b>R Square</b>	<b>R Square Adjusted</b>
<b>Productivity</b>	0,160	0,154

After the R-Square value reflects how much the research model can explain the phenomenon. Furthermore, the researchers conducted a test of path coefficients or often called connection strength which represents the response of the dependent variable to unit changes in the explanatory variable when other variables in the model are held

constant (Bollen, 1989). Hypothesis testing is carried out based on the Inner Model (structural model) test, including r-square output, parameter coefficients, and t-statistics. To see whether a hypothesis can be accepted or rejected, among others, by paying attention to the significance value between constructs, t-statistics, and p-

values. These values reflect in the bootstrapping results. The rule of thumb used in this study is t-statistic  $> 1.96$  with a

significance level of p-value 0.05 (5%) and a positive beta coefficient.

**Table 12.** Bootstrapping (N=5000)

	T statistics	P-Values
MF*MM $\rightarrow$ Productivity	5,442	0,000
MT*MM $\rightarrow$ Productivity	3,047	0,001
Meeting Fatigue $\rightarrow$ Productivity	1,207	0,114
Multi Meeting $\rightarrow$ Productivity	1,391	0,082
Multitasking $\rightarrow$ Productivity	6,938	0,000

The first hypothesis tests whether Meeting Fatigue negatively affects Productivity. The test results show the value of the Beta Meeting Fatigue coefficient on Productivity is 0.114, and the t-statistic is 1.207. These results state that the t-statistic is not significant because  $< 1.96$  with a p-Value of 0.114  $> 0.05$ ; therefore, we reject H1 or Meeting Fatigue has no adverse effect on Productivity.

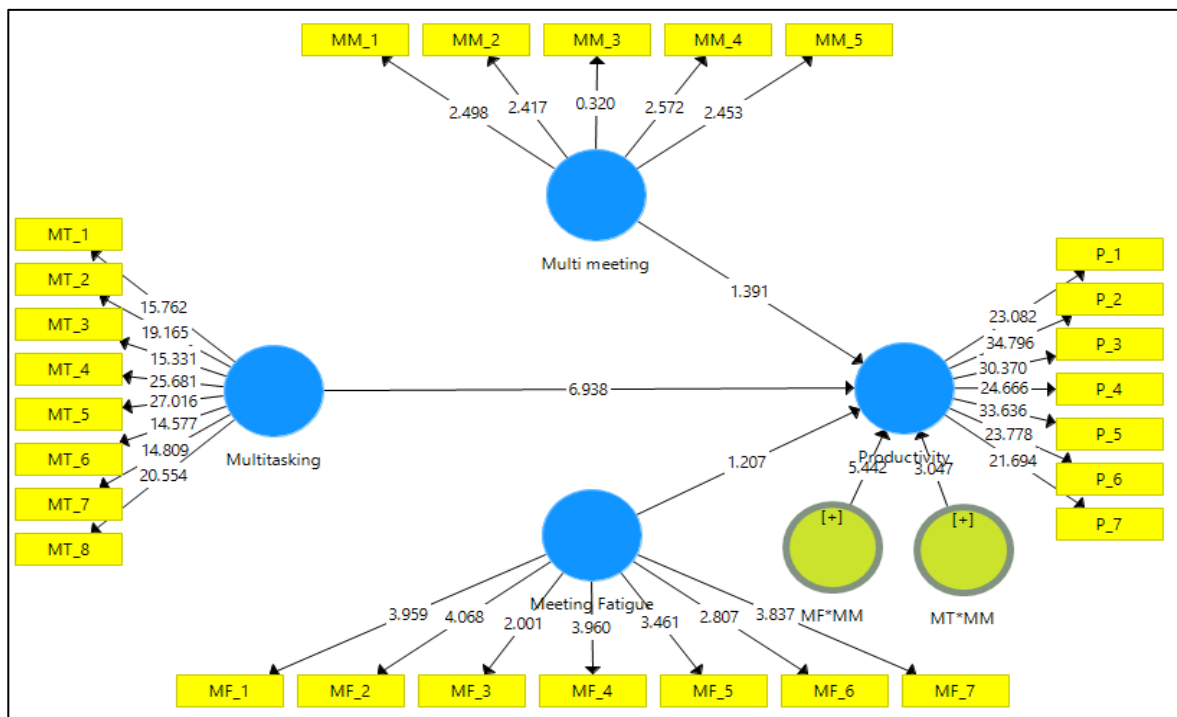
The second hypothesis tests whether Multitasking positively affects Productivity. The test results show the value of the Multitasking beta coefficient on Productivity is 0.398, and the t-statistic is 6.938. From these results, the t-statistic is significant because  $> 1.96$  with p-Value 0.000  $< 0.05$  so that H2 is accepted, or Multitasking has a positive effect on Productivity.

The third hypothesis Meeting fatigue can affect Productivity if there are multiple meetings as moderators; the test results show the beta coefficient of Moderating

Effect 1 is (-0.250), and the t-statistic is 5.442. From these results, the t-statistic is significant. Because  $> 1.96$  with p-Value 0.000  $< 0.05$  so that H3 is accepted, or meeting fatigue can affect Productivity if there are multiple meetings as moderators (weakening the relationship between the two).

The fourth hypothesis is that Multitasking affects Productivity when there are multi meetings as moderators; the test results show the beta coefficient of Moderating Effect 2 is (0.206), and the t statistic is 3.047. From these results, the t-statistic is significant. Because  $> 1.96$  with p-Value 0.001  $< 0.05$  so that H4 is accepted or Multitasking affects Productivity when there are multi meetings as Moderators (strengthening the relationship between the two).

After carrying out the various stages above and processing the data with PLS-SEM, the Outer Model results as follows:



activities that use computers and carry out for long periods can reduce productivity and proposed the need for "pause" or "rest time" to prevent reduced productivity. The results of this study indicate that multi-meeting does not affect productivity; in the context of studies conducted before the pandemic, this is not the case, but in the context of a pandemic, this is different.

However, interestingly, when multi meetings involve as a moderator between multi meetings and productivity or between multitasking and productivity, it is proven, and this encourages the possibility for further exploration of the role of multi-meeting in the dynamics between variables, especially when viewed from most respondents involved in this study. Then we suggest that companies or organizations should consider multi-meeting as a sign of productivity booster. However, within the situation that this research conducted, people view multi meeting as a source of energy to create productivity.

## 5. Conclusion

If we go back to the purpose of this study is that us as researcher would like to see the effect of multi-meeting, multitasking, and meeting fatigue on productivity. This study indicates that multi-meeting has a moderating role, whereas when abolishing multi-meeting, productivity is not affected by multi-tasking or meeting fatigue.

From the results of this study, we found that productivity during this pandemic is influenced by many other things besides multitasking and meeting fatigue. Therefore, efforts are needed to explore these other factors that have not to be revealed from this study.

## References

- Altschuller, S., & Benbunan-Fich, R. (2017). An integrated perspective of multitasking and multiple team membership. *Communications of the IIMA*, 15(1), pp. 1–15. <https://scholarworks.lib.csusb.edu/ciima/vol15/iss1/1>
- Baker, E. L., & Murphy, S. A. (2021). Conducting successful virtual meetings while managing COVID fatigue. *Journal of Public Health Management and Practice*, 27(2), pp. 208–212. <https://doi.org/10.1097/PHH.0000000000001335>
- Bennett, A. A., & Bennett, A. A. (2021). *ODU Digital Commons Videoconference Fatigue Exploring Changes in Fatigue after Videoconference Meetings during COVID-19*. <https://doi.org/10.1037/apl0000906>
- Cameron, A. F., Barki, H., Ortiz de Guinea, A., Coulon, T., & Moshki, H. (2018). Multicommunicating in meetings: Effects of locus, topic relatedness, and meeting medium. *Management Communication Quarterly*, 32(3), pp. 303–336. <https://doi.org/10.1177/0893318918759437>
- Chao, H., Lee, C., Iqbal, S., Czerwinski, M., Wong, P. N. Y., Rintel, S., Hecht, B., Teevan, J., & Yang, L. (2021). Large scale analysis of multitasking behavior during remote meetings. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*. <https://doi.org/10.1145/3411764.3445243>

- DeFilippis, E., Impink, S., Singell, M., Polzer, J. T., & Sadun, R. (2020). Collaborating during coronavirus: the impact of COVID-19 on the nature of work. *Harvard Business School Organizational Behavior Unit Working Paper No. 21-006*. pp. 1-30 <https://doi.org/10.2139/ssrn.3654470>
- DeGuinea, A. O. (2018). Employees' cognitive load and performance during multitasking use of information technology. In *26th European Conference on Information Systems: Beyond Digitization - Facets of Socio-Technical Change, ECIS*
- Fink, A. (2014). *Conducting results literature review: From the internet to paper* (4th ed). California: SAGE Publication.
- Fraenkel, J. R., Wallen, N. E., Hyun, H. H. (2012). *How to design and evaluate research in education*. New York: McGraw-Hill.
- Hair, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review*, 26(2), pp. 106–121. <https://doi.org/10.1108/EBR-10-2013-0128>
- Hair, J. F., Hult, G. T. M., Ringle, C. M. & Sarstedt, M. (2017), *A Primer on Partial Least Squares Structural Equation Modeling* (PLS-SEM). California: SAGE Publication.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), pp. 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Hülshager, U. R. (2016). From dawn till dusk: Shedding light on the recovery process by investigating daily change patterns in fatigue. *Journal of Applied Psychology*, 101(6), pp. 905–914. <https://doi.org/10.1037/ap10000104>
- Luong, A., & Rogelberg, S. G. (2005). Meetings and more meetings: The relationship between meeting load and the daily well-being of employees. *Group Dynamics*, 9(1), pp. 58–67. <https://doi.org/10.1037/1089-2699.9.1.58>
- Marchewka, M., Nesterak, J., Sołtysik, M., Szymła, W., & Wojnarowska, M. (2020). Multitasking effects on individual performance: An experimental eye-tracking study. *European Research Studies Journal*, XXIII(1), pp. 107–116. <https://doi.org/10.35808/ersj/1539>
- Morris, B. (2020). Why does zoom exhaust you? science has an answer. *Wall Street Journal - Online Edition*. Retrieved from <https://www.wsj.com/articles/why-does-zoom-exhaust-you-science-has-an-answer-11590600269>
- Mustajab, D., Bauw, A., Rasyid, A., Irawan, A., & Hamid, M. A. (2013). Working from home phenomenon as an effort to prevent COVID-19 attacks and its impacts on work productivity data. *The International Journal of Applied Business*, 53(9), pp. 1689–1699.
- Niemantsverdriet, K., & Erickson, T. (2017). Recurring meetings: An experiential account of repeating meetings in a large organization. *Proceedings of the ACM on Human-Computer Interaction*, 1(CSCW), pp. 1–17. <https://doi.org/10.1145/3134719>

- Parthasarathi, R., Gomes, R. M., Palanivelu, P. R., Senthilnathan, P., Rajapandian, S., Venkatachalam, R., & Palanivelu, C. (2017). First virtual live conference in healthcare. *Journal of Laparoendoscopic and Advanced Surgical Techniques*, 27(7), pp. 722–725. <https://doi.org/10.1089/lap.2016.0339>
- Peifer, C., & Zipp, G. (2019). All at once? The effects of multitasking behavior on flow and subjective performance. *European Journal of Work and Organizational Psychology*, 28(5), 682–690. <https://doi.org/10.1080/1359432X.2019.1647168>
- Petrova, Y., Cox, A. L., & Brumby, D. P. (2019). *Future challenges in design for multitasking at work*. Retrieved from <https://uclic.ucl.ac.uk/content/6-news-events-seminars/20190409-ucl-will-have-a-great-presence-at-chi-2019/etrovabrumbycox.pdf>
- Robinson, S., & Stubberud, H. A. (2012). Millennial workforce: Communicating and multitasking. *International Journal of Management and Information Systems*, 16(4), P. 307. <https://doi.org/10.19030/ijmis.v16i4.7307>
- Sekaran, U. & Bougie, R. (2016). *Research methods for business: A skill building approach* (7<sup>th</sup> ed.). United Kingdom: John Wiley.
- Space, W. L. (2014). International Standard Classification of Occupations (ISCO). *Encyclopedia of Quality of Life and Well-Being Research*, pp. 3336–3336. [https://doi.org/10.1007/978-94-007-0753-5\\_102084](https://doi.org/10.1007/978-94-007-0753-5_102084)
- Stefanie, K., Suryani, E., & Maharani, A. (2020). Flexible work arrangement, work life balance. *Jurnal Ilmiah MEA (Manajemen, Ekonomi, Dan Akuntansi)*, 4(3), pp. 1725–1750.
- Toney, S., Light, J., & Urbaczewski, A. (2021). Fighting zoom fatigue: Keeping the zombies at bay. *Communications of the Association for Information Systems*, 48, pp. 40–46 <https://doi.org/10.17705/1CAIS.04806>