

Tanika 3

by Tanika Sofianti

Submission date: 03-Apr-2023 04:27PM (UTC+0700)

Submission ID: 2054470965

File name: 239-Article_Text-1251-1311-10-20230208.pdf (428.49K)

Word count: 6888

Character count: 37885

Measuring Worker Perception on Remote Working Adoption During Covid-19 Pandemic

A Case Study in Indonesia for Identifying the Potential New Normal of Work Implementation

Tanika D Sofianti
*Laboratory of Innovation and Digital Transformation,
Industrial Engineering of Swiss German University*
Tangerang, Banten, Indonesia,
tanika.sofianti@sgu.ac.id
<https://orcid.org/0000-0001-7430-1162>

Aditya T Pratama
Industrial Engineering of Swiss German University
Tangerang, Banten, Indonesia,
aditya.pratama@sgu.ac.id
<https://orcid.org/0000-0002-0134-6690>

Ivan Kurniawan
*Industrial Engineering of Swiss German University,
Tangerang, Banten, Indonesia,
Industrial Management, Universiti Malaysia Pahang, Gambang,
Pahang, Malaysia,
ivan.kurniawan@sgu.ac.id
<https://orcid.org/0000-0003-4924-4770>*

Jessica Florencia
*Management and Optimization of Supply Chain and Transport
IMT Atlantique, France,
jessica.florencia50@gmail.com
<https://orcid.org/0000-0002-0474-0490>*

Abstract— The Covid-19 which started in late 2019 has led to extraordinary measures by government and commerce, to control and reduce the spread of the virus. Many companies have had to rethink the way they work due to travel restrictions and cancellations of major events. While workers related to production activities as well as system-related workers such as bank tellers, cashiers, medical staff, and distribution operators are still working on site, the majority of the workforce in Indonesia has been encouraged to practice "working from home" or remote working during the pandemic. Remote Working means adapting to new circumstances, battling a new set of distractions, as well as experiencing an unprecedented mix of work and personal life. Committing to work from home without understanding performance indicators and drivers can lead to a company's operational failure. Even though the Covid-19 pandemic measures are decreasing, the need to implement a new normal of work that allows for flexible work arrangements and implementation of remote work is increasing. Therefore, the organization needs to understand and control the measures required to keep the company productive in the new work setting. This is important to maintain organizational resilience against any pandemics and technological disruptions, as well as to ensure organizational sustainability. Seven performance indicators of remote work performance and eight influencing factors have been compiled in this study by reviewing previous research on remote work, virtual teamwork, agile teamwork and knowledge management. Further studies are needed to verify the performance indicators and influencing factors, to reveal the correlations between the measures and to identify the most likely drivers of remote work that may transform an organization to its new setting.

Keywords— *working from home, remote working, agile teamwork performance, measurement framework*

I. INTRODUCTION

The adoption of remote work (RW) has been increasing, especially since Covid-19 pandemic overspread around the globe since end of 2019. Researches on remote working has been developed since the beginning of 2000s. Some previous researches promoted its benefits such as its ability to enhance employees productivity [1], to increase the flexibility in working arrangements, and to improve work-life balance [2]. Despite its pros and cons, the urgency to force "work from home" scheme in many fields during the pandemic is the

opportunity to reveal remote working effectiveness and how the work arrangement should be set for the post-pandemic. Considering its contribution to employees' productivity, both the employee and employers need to be equipped with skills and knowledge of remote working arrangement. The employee needs knowledge of how to overcome the obstacles, and how to switch from "office mode" to "home mode" and to "office mode" again between the schedules that even become tighter in "work from home" mode. While the employers need to know how to perform as virtual leader, how to manage the projects, and how to measure the performance of the team, and the organization. The purpose is to assure that the resource invested before the remote working was forced to be implemented broadly still give return value in the same level.

Based on rough estimation, many benefits can be obtained from remote working i.e. lower expense for office room rent and work travelling, increasing numbers of meeting and followed by the problem solved in the meeting, lower cost for hiring expatriate, not to mention its contribution to lower carbon footprint and environment sustainability. And once the best remote working arrangement is found, the door of "remote from anywhere" will be widely opened.

However, understanding on remote working adoption in Indonesia is still very limited while the transition from Covid 19 as pandemic to endemic will not lead to the full-on office working arrangement, like it was before the pandemic. Therefore, a study to reveal the worker preference about the working arrangement in the post pandemic is required; and since flexible working arrangement is most likely to be preferred, it is important to reveal the success indicators and the benefits of remote working; and the influencing factors.

II. LITERATURE REVIEW

In order to develop the measurement framework for elaborating the influencing factors and performance indicators of remote working, this study reviewed some literatures in remote working including those related to work from home, the influencing factors of remote team performance, the agile collaboration in remote working, and advantages, disadvantages, challenges and driving forces of remote working, both related to and NOT related to Covid-19 pandemic.

A. Remote Working – Concept of Working

Ref. [3] in their study about role of remote working in smart cities investigated three types of working arrangement.

1) Office Working

Work is carried out in an office along colleagues of the same organization. Ref. [3] defined that a home worker uses home as their main place for working at least two days in a week.

2) Coworking

Work is carried out in an office or another working environment along people who are self-employed and working for different employers. Places used in this working arrangement, are open place office environments where people can work alongside other workers, including unaffiliated professionals and pay a fixed fee per month [4]

3) Home Office Working

This work arrangement also known as “Work from Home” in which employee do the work from home rather than commuting or traveling to a central place of work. This working arrangement based on several evidence is considered to be the least popular types of remote working [5].

B. Work from Home

Ref. [6] developed a framework on their study on work from home in Hong Kong based on review on previous studies about working from home, remote work, e-working, telecommuting, flexible workplace and teleworking.. The analytical framework can be seen in Figure 1.

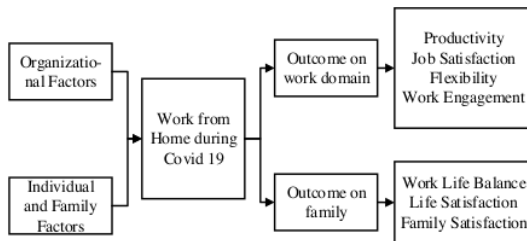


Fig. 1. Analytical Framework [6]

The framework introduced by Ref. [6] was used to guide the investigation of Work from Home in Hong Kong that has been held during Covid-19 pandemic. The investigation was purposed to examine if work from home arrangement can be a permanent arrangement or will remain as a transitory element due to the special environment. There are two factors that influenced the performance in work from home arrangement namely organizational factors, and individual and family factors. The impact, either the benefits or disadvantages, of work from home was identified from its outcome on two domains namely work domain, and personal or family domain. The outcome on work domain were identified from four indicators: productivity, job satisfaction, flexibility, and work arrangement. While the outcome on personal or family domain were identified from three indicators: work life balance, life satisfaction and family satisfaction.

In order to make work from home to be more feasible in a local context, Ref. [6] recommended following possible actions to the Government of Hong Kong:

- Introducing a formal work from home guideline for employee and employers;
- Different guidelines should be provided to different sectors;
- Minimal requirements should be specified for training of using technology for virtual office, also training for skills in technical facilities for work from home arrangement
- The current labor legislation should be reviewed and the labor insurance policies should be reviewed to be extended to home working
- Providing subsidy and other incentives to encourage SME to adopt work from home measures.
- Strengthening the ongoing Distance Business Program, and
- Promoting Family friendly employment practices further.

C. Influencing factors of remote team performance

In 2019, Ref. [7] introduced communication, relationship building, cohesion, and trust as factors that influenced virtual team performance. By adopting Ref. [7], this paper promoted a structure model of influencing factors of virtual team performance and the performance of virtual team as can be seen in Fig. 2.

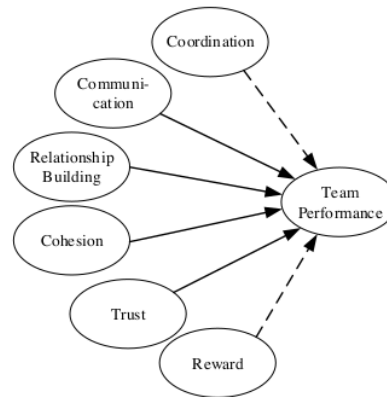


Fig. 2. Influencing factors of virtual team performance in Malaysia [7]

From the survey, coordination and reward were not confirmed to be influencing factors of virtual team performance [7].

D. Advantages, Disadvantages, Challenges and Driving Forces of Remote Working

TABLE I. ADVANTAGES, DISADVANTAGES, CHALLENGES AND DRIVING FORCES OF REMOTE WORKING [8]

Dimensions	Measures
Advantages	<ol style="list-style-type: none"> 1. Reduced Overall Cost 2. Work-life balance 3. Leverage remote expertise and establish competitive advantage 4. Enhance worker autonomy 5. Increased productivity and morale
Disadvantages	<ol style="list-style-type: none"> 1. Communication problems 2. Infrastructure problems 3. Feeling isolated/lack of physical interaction 4. Technology dependency problems 5. Precariousness problems
Driving Forces	<ol style="list-style-type: none"> 1. Flexibility 2. Technology 3. Economic benefits 4. Managing mobility and critical business interdependencies 5. Added Value
Challenges	<ol style="list-style-type: none"> 1. Communication Challenges 2. Management Challenges 3. Technological Challenges 4. Security challenges 5. Challenges in maintaining cohesion

Ref. [8] in their systematic literature review, elicited advantages, disadvantages, challenges and driving forces of Remote Working, as well as their relation. Their findings can be seen in Table 1.

E. Agile Collaboration in Remote Working

Remote working, same with virtual teams, are created to unified divers' expertise and knowledge from its members, and therefore the team members need to rely on each other and share knowledge. Knowledge sharing in remote working substantially is different than in co-located teams, and it relies on electronic communication which is more effective for sharing explicit knowledge but not for tacit knowledge that requires face-to-face interaction for a certain period of time. This causes the quality decrement of knowledge being sharing in the team, lower team performance and weaken the trust within the team [9]. The tools that can be used for agile collaboration of remote team based on Ref. [9] and [10] is depicted in Table 2.

TABLE II. TOOLS FOR AGILE COLLABORATION OF REMOTE TEAM [10]

Workspace Zone	Example of Tools	How it Works
Team zone	SharePoint Online	A virtual whiteboard repository that any team member can contribute to with comments, notes, drawings, and in-progress ideas; also known as the war room
Meeting zone	Zoom, WebEx, Slack	Multimodal communication channels, can be used for a variety of styles, purpose and schedules
Shared amenities zone	Dovetail Software, GitHub, Microsoft Excel, Sketch, Microsoft PowerPoint	An area where the team creates things and organizes information. In order to show work in progress, "zone" can be shared in various communication channels
Alternate work zone	Egnyte	An area where team leaders and others can be updated daily with the status of deliverables. Considered as source of truth on deliverables
Project planning/ management/ ticket tracking	Jira	A dashboard for coordinating working activities, can be used as a repository for user history and bug tracking

Culture possibly is the most difficult part and the most important of remote working, considering that culture is an intangible but critical aspect of a workplace, and when teams are not in same location it will be easily lost. Many inventive ways are looked for to develop a sense of culture for the team members, to compensate physical distance with a virtual social intimacy. Empathy, transparency and engagement are three good practices that can help to create a functioning culture [10]. Ref. [11] conducted research to reveal the benefits and challenges of agile and remote working, their findings as can be seen in Table 3.

TABLE III. BENEFITS AND CHALLENGES OF AGILE AND REMOTE WORKING [11]

Dimensions	Measures
Benefits as an agile or remote worker in work domain	<ul style="list-style-type: none"> - More time to get work done - Having essential equipment nearby - Reduced travel - Increased productivity - Fewer distraction - More Flexible
Benefits as an agile or remote worker in home domain	<ul style="list-style-type: none"> - More time to get work done - More time to spend with family members - Reduced travel - Increased flexibility - Better able to meet personal commitments - Greater work-life balance
Challenges as an agile or remote worker in work domain	<ul style="list-style-type: none"> - Technology challenges - Less interaction with colleagues - Access challenges - Lack of consistent office space - Difficulties in balancing time - More travel
Challenges as an agile or remote worker in home domain	<ul style="list-style-type: none"> - No challenges - Balancing time and setting boundaries - Physical home working environment - Family demands - Distraction and interruptions - Travel further and being away from home

III. METHODOLOGY

The methodology used in this research started with literature review on previous studies related to remote working, virtual work, working from home, agile remote teamwork and knowledge management; proceeded with conceptualization of the influencing factors and the performance indicator of working from home. The measurement framework was developed based on analysis and synthesis on measures in previous researches related to process, influencing factors and performance indicators of remote working and agile teamwork. Later on, a questionnaire was developed which consist of questions to capture the response experience and perception on remote working adoption during Covid-19 Pandemic. There were 139 collected data from survey distributed in April to July 2022. The eight indicators of influencing factors and seven indicators of benefits of remote working are collected in ordinal data type to ease the process of perception capturing. Therefore, data validation and reliability testing on the 15 indicators had to be conducted to verify the collected data is valid for representing respondent perception of remote working adoption during Covid-19 pandemic.

IV. RESEARCH FRAMEWORK

The research framework depicted in Figure 3 was developed by adopting the previous studies in remote working [6], remote agile teamwork [11] and knowledge management [12], [13]. The framework for measuring remote working benefits and the influencing factors are explained in Table 4 and Table 5.

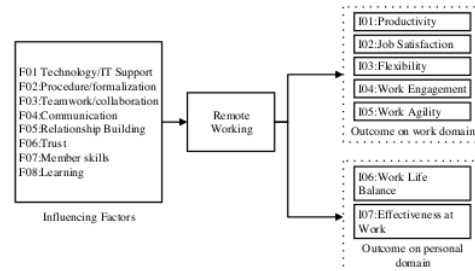


Fig. 3. Research Framework

Measurement framework of remote working benefits and the influencing factors were developed by adopting the previous studies that elaborate the benefits, disadvantage, drivers, and challenges in remote working, and remote agile teamwork which also strongly related knowledge management such as [8], [10], [11], [14].

A. Measurement Framework of benefits of "Working from Home"

By referring to previous studies, the indicators of advantage that can be obtained from remote working, as can be seen in Table 4, are grouped into work domain and personal domain. For work domain the indicators are productivity, job satisfaction, flexibility, work engagement, and work agility; while for personal domain are work life balance and effectiveness at work.

TABLE IV. BENEFITS OF REMOTE WORKING

No	Criteria	Definition
On Work Domain		
1	Productivity	Productivity identify the effectiveness of remote working arrangement, able to produce higher quality output [15]
2	Job Satisfaction	Satisfaction can be seen as the extent of the members perception of decision and agreements with the eventual outcome [16] in [17]
3	Flexibility	Flexibility is referred as flexibility in time and place in completing work [2]
4	Work Engagement	Work engagement is referred as a positive, affective-motivational state of high energy combined with high levels of dedication and a strong focus on work [2], [18], [19]
5	Work Agility	Work agility is defined as the ability to work with insight, flexibility and confidence in response to challenging and changing circumstances [20]
On Personal Domain		
6	Work Life Balance	Work Life Balance happens when work-life and non-work life is in balanced state, which leads to family-life satisfaction [6]
7	Effectiveness at Work	Indicates the time spent at work is optimum so that the worker is considered to be well performed which caused by work life balanced obtained while working from home during Covid-19 Pandemic [6]

B. Measurement Framework of Influencing Factors of "Working from Home"

The measures of influencing factors of successful remote working, as can be seen in Table 5, are Technology/ IT Support, Procedure/ Formalization, Teamwork/ Collaboration/ Communication, Relationship Building, Trust, Member skills, and Learning.

TABLE V. INFLUENCING FACTORS OF REMOTE WORKING

No	Criteria	Definition
1	Technology/ IT Support	Technology/ IT support in knowledge management is defined as the degree to which the system is supported by the use of ITs [21]. Many researchers have found that IT is a crucial element for knowledge sharing and knowledge creation [22]–[24], and in this study is taken into account as one of the important factors of remote working as in remote working and agile team work knowledge sharing activities is intense.
2	Procedure/ Formalization	Formalization refers to the degree to which decision making and working relationships are governed by formal rules, such as procedures and standard policies [25], [26]

TABLE V. INFLUENCING FACTORS OF REMOTE WORKING (CONTINUED)

No	Criteria	Definition
3	Teamwork/ Collaboration	Collaboration is the degree to which people in a work group actively supporting one another [27]. This dimension is adopted by considering that workers in a remote working and virtual teamwork is affected by collaborative culture through increasing knowledge exchange [28], [29]. Exchanging knowledge among members is a prerequisite for knowledge creation, an important component in a team of remote and virtual working
4	Communication	Communication refers to the transition of information, knowledge and understanding, using verbal or nonverbal symbols between two or more team members in the appropriate manner [30]
5	Relationship Building	Relationship building in this study includes interaction that is designed to increase feelings of inclusiveness or belonging to the team that further promote cohesion and trust [31].
6	Trust	Trust is defined as the willingness of team members of a virtual teamwork, including the remote workers to be reliant on each other, where each member will perform actions that beneficial to the success of the team [32]
7	Member skills	Skills in this study refers to the ability of the members that supported the remote working i.e. ability to work independently, self-organized, self-discipline, self-motivation, self-confidence, time management skills, computer literacy knowledge [14]
8	Learning	Learning in this paper refers to the degree to which learning activity is encouraged in organizations [27], it emphasis on how learning infuses an organization with new knowledges [33].

V. DATA COLLECTION

An online survey was conducted to collect data from the respondents about their perception on their working experience during Covid-19 pandemic, to reveal the possible new normal of working arrangement in the post pandemic, and also to identify the success indicators and influencing factors. A questionnaire developed by referring to previous studies in the same topic and the survey was conducted in May until July 2022, when most of working arrangement in Indonesia was still more to "working from home", but it was just before the new normal working arrangement started emerging in many areas in Indonesia, and the measures related to health protocol in Indonesia was getting relaxed. The analysis of the collected data can be seen the following chapters.

A. Respondence profiles

The profiles of the respondence can be seen in Table 6. From 139 respondence, 108 are male and 31 are female. Most of them are bachelor degree holders. Some of the respondents are Indonesian citizens living in other countries.

TABLE VI. RESPONDENCE PROFILES: GENDER, LATEST EDUCATION AND LOCATION

Gender	Count
Female	31
Male	108
Latest Education	Count
Bachelor	62
College	37
Graduate	21
Post Graduate	17
Vocational School	2

TABLE VI. RESPONSE PROFILES: GENDER, LATEST EDUCATION AND LOCATION (CONTINUED)

Location of the company that you are working for	Count
Indonesia	128
Germany	4
Singapore	3
USA	3
Canada	1
Total Respondent	139

From the response collected in the survey, as can be seen in Table 7 that during Covid-19 pandemic, 34.53% of the respondents experienced full working from home arrangement, 29.50% had to come to the office at least once a week, 16.55% should fully working from the office, and the rest worked with various working arrangements.

TABLE VII. RESPONSE EXPERIENCE ON WORKING ARRANGEMENT DURING COVID-19 PANDEMIC

Working Arrangement	Count	%
Full working from home	48	34.53%
I "work from office" at least 1 day/week	41	29.50%
Full working from the office	23	16.55%
50% WFH 50% WFO	5	3.60%
Two Days WFO and Three Days WFH in every week	3	2.16%
Three Days WFO and Two Days WFH in every week	2	1.44%
Others	17	12.23%
TOTAL	139	

As might be expected, full office work arrangements with face-to-face interaction were not selected as the most favorable for post-pandemic work arrangements, nor were full online work arrangements. Most of the respondents preferred hybrid work arrangements where workers do not have to come to the office five days a week. "Blended" working arrangements with high use of remote working tools such as electronic documents, email, video conferencing, and other collaborative work platforms were chosen as the 2nd most preferred work arrangement indicating lower worker preference in face-to-face interactions, considering they can be replaced by online interaction and it leads to lower traveling frequency. The choice of work arrangement "Work from anywhere and be flexible" justified the respondent's preference not to work entirely online, nor to be fully in an office work setting. Details of respondents' preferences can be seen in Table 8.

TABLE VIII. RESPONSE PREFERENCE ON WORK PATTERN FOR POST COVID-19 PANDEMIC

Preferences	Count	%
Hybrid (x days as working from home/remote, and y days as working on-site/in the office)	79	56.83%
Blended (Full on-site by utilizing remote working tools such as e-documents, E-mail, Video Conferences, collaborative working platform etc)	27	19.42%
Full Online	16	11.51%
Face - to - face / full on-office	14	10.07%
Work from anywhere and flexible	3	2.16%
TOTAL	139	1

B. Data Validation

1) Benefits of Remote Working

TABLE IX. VARIABLES VALIDATION FOR BENEFITS OF REMOTE WORKING ON WORK DOMAIN

Measures	Cronbach Alpha
Output on Work Domain: Performance / Productivity in the Company/Institution - Most of the projects/programs were completed on time - Most of the projects/programs were completed within budget - Most of the projects/programs were completed to specification - Most of the projects/programs were viewed as a success by the team members and the sponsors of the project - Overall the management of projects/ programs/ process was completed successfully - I and my colleagues worked efficiently - I and my colleagues met our objectives - I and my colleagues generally worked on schedule	0.893
Output on Work Domain: Job Satisfaction - I am satisfied with my ability in working - I am satisfied with the commitment of the company/institution - I am confident at work	0.701
Output on Work Domain: Flexibility - I am satisfied with the flexibility in the scheduling of hours worked, such as alternative work schedules, and arrangements regarding shift and break schedules (e.g., flex time and compressed workweeks), offered by the company/institution - I am satisfied with the flexibility in the number of hours worked, such as part time work and job shares, offered by the company/institution - I am satisfied with the flexibility in the place of work, such as working at home or at a satellite location, offered by the company/institution	0.913
Output on Work Domain: Work Engagement - I am enthusiastic about my job - My job inspires me - Whenever there is a request to complete a task, I will promptly respond - Whenever there is a need to execute a new task/project, I will promptly volunteer to help - I feel happy when I am working intensely - I am proud on the work that I do	0.872
Output on Work Domain: Work Agility - I have the ability to work with insight, knowing myself well enough in completing the tasks; in response to challenging and changing circumstances - I have the ability to work with flexibility, adapting and executing fluidly to changing circumstances, standing up to challenges and maintaining performance under pressure; in response to challenging and changing circumstances - I have the ability to work and to thrive in tough situation with composure, confidence and positivity; in response to challenging and changing circumstances. - I have the ability of framing challenges as learning opportunities and not fearing mistakes. It is to think with eagerness, openness and curiosity to personal and organizational change	0.885

TABLE X. VARIABLES VALIDATION FOR BENEFITS OF REMOTE WORKING ON PERSONAL DOMAIN

Measures	Cronbach Alpha
Output on Personal Domain : Satisfaction with work life balance (SWLB) - I am satisfied that with my current work-style, I am able to meet the needs of my job with those of my personal life - I am satisfied that with my current work-style, I am successful in managing my home and work demands - I am happy that with my current work-style, I have better contributions towards my home and family - I am satisfied with the current opportunities can perform my job well and yet be able to perform home duties adequately - With my current work-style, I have more time to reach my personal and career goals satisfactorily - I am satisfied that with my current work-style, I can have more-balanced time between work and personal life	0.952
Output on Personal Domain : Improved Effectiveness at work - My balanced life gives me ability to function effectively at work - Work-life balance that I experienced, contributes to improvement of my motivation and commitment - Satisfaction with Work-life balance that I experienced helps me in building good teams, creative people and positive attitudes with my colleagues	0.922

Before conducting descriptive analysis on collected data that consist of ordinal types, it is important to do a validation on the data from the respondents. The results of data validation for “benefits of remote working in work domain” can be seen in Table 9, and the results of data validation “benefits of remote working in personal domain” can be seen in Table 10. From the Cronbach Alpha value of each of the dimension, it can be seen that all collected data for “benefits” dimension are valid for further analysis.

2) Influencing Factors of Remote Working

TABLE XI. VARIABLES VALIDATION FOR INFLUENCING FACTORS

Measures	Cronbach Alpha
Influencing Factor: Technology/ IT Support - The company/institution provides IT support for collaborative works regardless of time and place (i.e. google-classroom, trello, asana, clickup, jira, etc) - The company/institution provides IT support for communication among organization members. (i.e. whatsapp, email) - The company/institution provides IT support for searching for and accessing necessary information. - The company/institution provides IT support for decision making - The company/institution provides IT support for systematic storing	0.843
Influencing Factor: Procedure/ Formalization - In the company/institution there are many activities that are not covered by some formal procedures. - In the company/institution, members/employee can ignore the rules and reach informal agreements to handle some situations. (R) - In the company/institution, members/employee make their own rules on the job. (R)	0.648

TABLE XI. VARIABLES VALIDATION FOR INFLUENCING FACTORS (CONTINUED)

Measures	Cronbach Alpha
Influencing Factor: Teamwork/ collaboration - I am very supportive to my colleagues - I am helpful to my colleagues - I am willing to collaborate across organizational units within the company/institution - I am willing to accept responsibility for failure.	0.790
Influencing Factor: Communication - I am interested in building a good relationship as in completing the tasks/projects - While having a discussion, I want to stick to the main purpose of the discussion - In my opinion, my colleagues/the department members had effective communication - I can communicate well not only with my colleagues from the same department, but also with other members from another department.	0.721
Influencing Factor: Relationship Building - I and my colleagues relied on each other and consulted each other for supports - I experienced a sense of shared goals and objectives with my colleagues and the institution - Knowledge and information sharing is a group norm/standard within the company/institution	0.790
Influencing Factor: Trust - I and my colleagues are generally trustworthy. - I and my colleagues have reciprocal faith in others' intentions and behaviors - I and my colleagues have reciprocal faith in others' ability - I and my colleagues have reciprocal faith in others' behaviors to work toward organizational goals. - I and my colleagues have reciprocal faith in others' decision toward organizational interests than individual interests. - I and my colleagues have relationships based on reciprocal faith.	0.911
Influencing Factor: Member skills - I have ability to work independently - I am tenacious or diligent - I have a good - time management skills - I have good computer literacy knowledge - I am specialists in my own part.	0.794
Influencing Factor: Learning - The company/institution provides various formal training programs for performance of duties for me and my colleagues - The company/institution provides opportunities for informal individual development other than formal training such as work assignments and job rotation. - The company/institution encourages me and my colleagues to attend seminars, symposia, and so on. - The company/institution provides various programs such as clubs and community gatherings as part of learning activities for me and my colleagues - I am satisfied by the contents of job training or self-development programs provided by the company/institution.	0.899

The results of data validation for “influencing factors” can be seen in Table 11. From the Cronbach Alpha value of each of the dimension, it can be seen that all collected data for “benefits” dimension are valid for further analysis and the results can be generalized to general working situation.

C. Descriptive Analysis of Benefits of Remote Working

In order to reveal the perception of the respondents about their experience of working arrangement during the Pandemic, descriptive analysis was also conducted on "benefit of remote working" dimension and "influencing factors" dimension.

TABLE XII. BENEFITS OF REMOTE WORKING

	Variables	Minimum	Mean	Std. Deviation
Work Domain				
1	Work Agility	2.75	4.3525	0.59345
2	Work Engagement	2.33	4.2818	0.57169
3	Job Satisfaction	2.67	4.2134	0.54582
4	Flexibility	1	4.1487	0.90193
5	Performance / Productivity in the Company/Institution	2	4.1214	0.56785
Personal Domain				
6	Improved Effectiveness at work	2	4.1966	0.71539
7	Satisfaction with work life balance (SWLB)	1	4.0336	0.82341

The results of descriptive analysis of benefit of remote working can be seen in Table 12. For work domain, the data shows that the respondents perceived that the highest benefits they obtained was work agility with an average of 4.35, followed by work engagement and job satisfaction. For personal domain, it shows that the respondents perceived their effectiveness at work improved, with score higher than their satisfaction on work life balance during the pandemic. The overall results are interesting because all scores in average are higher than 4 or satisfactory, but by considering the minimum score for each of the measures and the standard deviation scores that considered to be high (which the lowest deviation is higher than 0.5) it can be concluded that the collected response were pretty varying.

D. Descriptive Analysis of Influencing Factors of Remote Working

The results of descriptive analysis of influencing factors of remote working can be seen in Table 13. The data shows that the respondent perceived that in the working arrangement they experienced during Covid-19 Pandemic, the Teamwork/ collaboration had the highest score with an average of 4.47 followed by Communication and Technology/ IT Support.

The most interesting part is that the respondents think that the lowest score belongs to Procedure/ Formalization. Understandably, the shifting to remote work arrangement and to other forms of new normal of work was sudden and the regulations and guidelines for the new working arrangement was not ready, not to mention the chaotic situation caused by the pandemic. Respondents also consider learning with the second lowest score, and it is most likely having the same reason with Procedure/Formalization.

TABLE XIII. INFLUENCING FACTORS

	Variables	Minimum	Mean	Std. Deviation
1	Teamwork/ collaboration	3.25	4.5540	0.48226
2	Communication	3.25	4.4101	0.51868
3	Technology/ IT Support	2.20	4.3655	0.65715
4	Relationship Building	2.33	4.3549	0.58732
5	Member skills	2.80	4.2705	0.56047
6	Trust	2.00	4.2278	0.59254
7	Learning	1.00	3.9237	0.84318
8	Procedure/ Formalization	1.00	3.2182	0.84243

VI. CONCLUSION AND RECOMMENDATION

The results of analysis on the benefits and influencing factors of remote working during the Covid-19 pandemic, identify the worker experience with the work setting transition and the new normal of work during Covid-19 pandemic. It can be seen that even though there were minimum guidelines, but the respondents perceived that the shifting went well and they were satisfied with the new work arrangement. Some of the average scores of influencing factors are lower than 4 but all average score of benefits are greater than 4 which lead to conclusion that the respondents are satisfied with the new working arrangement, where they did not have to come to the office for five days a week, and interaction with colleagues and customers can be done with online interactions using several types of communication platform. This possibly because less cost, time and energy had to be spent on travelling to office and for other face to face interactions, thus the respondent can use it for other productive activities of working. The analysis results on respondent's expectation on working arrangement in the post pandemic show that respondent is comfortable and confident enough to continue remote working adoption, and they don't want to go to the office for working for the whole weekdays anymore.

In order to identify the root cause of benefits earned by remote working during the Pandemic and which factors that influence the performance the most, further studies and analysis on the collected data are needed. Doing correlation analysis, other regression analysis methods, or the structural equation methods are potential to identify the methods, tools and resources needed for the new working arrangement which will adopt more digital technologies. The findings of the further study most likely will be a reference of the new normal of work and identifying future of digital competence caused by the post pandemic situation and other possibly technology disruptions.

REFERENCES

- [1] E. Baker, G. C. Avery, and J. Crawford, "RESEARCH AND PRACTICE Professionals Work From Home," *Res. Pract. Hum. Resour. Manag.*, vol. 15, 2007, [Online]. Available: <https://opus.lib.uts.edu.au/bitstream/10453/6434/1/2007000202.pdf>.
- [2] E. K. Dizaho, R. Salleh, and A. Abdullah, "Achieving work life balance through flexible work schedules and arrangements," *Glob. Bus. Manag. Res.*, vol. 9, no. 1, pp. 455-465, 2017, [Online]. Available: <http://search.ebscohost.com/login.aspx?direct=true&AuthType=shib&db=bth&AN=122717287&site=eds-live&scope=site&custid=uphoenix>.
- [3] A. Kyllili et al., "The role of Remote Working in smart cities: lessons learnt from COVID-19 pandemic," *Energy Sources, Part A Recover. Util. Environ. Eff.*, vol. 00, no. 00, pp. 1-16, 2020, doi: 10.1080/15567036.2020.1831108.
- [4] C. Spinuzzi, "Working Alone Together: Coworking as Emergent Collaborative Activity," *J. Bus. Tech. Commun.*, vol. 26, no. 4, pp. 399-441, 2012, doi: 10.1177/1050651912444070.
- [5] I. Hardill and A. Green, "Remote working - Altering the spatial contours of work and home in the new economy," *New Technol. Work Employ.*, vol. 18, no. 3, pp. 212-222, 2003, doi: 10.1111/1468-005X.00122.
- [6] L. Vyas and N. Butakhieo, "The impact of working from home during COVID-19 on work and life domains: an exploratory study on Hong Kong," *Policy Des. Pract.*, vol. 4, no. 1, pp. 59-76, 2021, doi: 10.1080/25741292.2020.1863560.
- [7] C. K. Tan, T. Ramayah, A. P. Teoh, and J. H. Cheah, "Factors influencing virtual team performance in Malaysia," *Kybernetes*, vol. 48, no. 9, pp. 2065-2092, 2019, doi: 10.1108/K-01-2018-0031.
- [8] R. Ferreira, R. Pereira, I. S. Bianchi, and M. M. da Silva, "Decision factors for remote work adoption: Advantages, disadvantages, driving forces and challenges," *J. Open Innov. Technol. Mark. Complex.*, vol.

- 7, no. 1, pp. 1–24, 2021, doi: 10.3390/joitmc7010070.
- [9] A. Deshpande, H. Sharp, L. Barroca, and P. Gregory, "Remote Working and Collaboration in Agile Teams," 2016.
- [10] B. B. Rehberg, M. Danoesastro, S. Kaul, and L. Stutts, "How to Remain Remotely Agile Through Covid-19," *Boston Consulting Group*, 2020.
- [11] C. Stone, S. Horan, and P. Flaxman, "What does the future hold? Investigating the benefits and challenges of agile and remote working," *CIPD Appl. Res. Conf. 2018*, pp. 1–11, 2018.
- [12] B. Choi and H. Lee, "Knowledge management strategy and its link to knowledge creation process," *Expert Syst. Appl.*, vol. 23, no. 3, pp. 173–187, 2002, doi: 10.1016/S0957-4174(02)00038-6.
- [13] H. Lee and B. Choi, "Knowledge management enablers, processes, and organizational performance: An integrative view and empirical examination," *J. Manag. Inf. Syst.*, vol. 20, no. 1, pp. 179–228, 2003, doi: 10.1080/07421222.2003.11045756.
- [14] Y. Baruch, "Teleworking: Benefits and Pitfalls as Perceived by Professionals and Managers," *New Technol. Work Employ.*, vol. 15, no. 1, pp. 34–49, 2000.
- [15] S. L. Jarvenpaa and B. Ives, "The global network organization of the future: Information management opportunities and challenges," *J. Manag. Inf. Syst.*, vol. 10, no. 3, pp. 25–57, 1994, doi: 10.1080/07421222.1994.11518019.
- [16] L. Chidambaram, "Relational development in computer supported groups," *MIS Q.*, vol. 20, no. 2, pp. 143–165, 1996.
- [17] C. Lin, C. Standing, and Y. C. Liu, "A model to develop effective virtual teams," *Decis. Support Syst.*, vol. 45, no. 4, pp. 1031–1045, 2008, doi: 10.1016/j.dss.2008.04.002.
- [18] R. Gerards, A. de Grup, and C. Baudewijns, "Do New Ways of Working increase work engagement?," *Pers. Rev.*, vol. 47, no. 2, pp. 517–534, 2018.
- [19] W. B. Schaufeli and A. B. Bakker, "Defining and Measuring Work Engagement Bringing Clarity to the Concept," in *Work Engagement: a Handbook of Essential Theory and Research*, Psychology Press, 2010, pp. 10–24.
- [20] M. P. T. Consulting, "Agility: Unlocking the potential of Individuals and Teams," 2021. [Online]. Available: https://resources.morganphilips.com/documents/UK_MPTC_Agility_briefing_2021.pdf.
- [21] A. H. Gold, A. Malhotra, and A. H. Segars, "Knowledge management: An organizational capabilities perspective," *J. Manag. Inf. Syst.*, vol. 18, no. 1, pp. 185–214, 2001, doi: 10.1080/07421222.2001.11045669.
- [22] T. H. Davenport and L. Prusak, *Working Knowledge: How Organizations Manage What They Know*. 1998.
- [23] P. Gottschalk, "Strategic Knowledge Networks: The Case of IT Support for Eurojuris Law Firms in Norway," *Int. Rev. Law, Comput. Technol.*, vol. 14, no. 1, pp. 115–129, 2000, doi: 10.1080/13600860054953.
- [24] A. K. Gupta and V. Govindarajan, "Knowledge flows within multinational corporations," *Strateg. Manag. J.*, vol. 21, no. 4, pp. 473–496, 2000, doi: 10.1002/(SICI)1097-0266(200004)21:4<473::AID-SMJ84>3.0.CO;2-I.
- [25] C. W. Holsapple and K. D. Joshi, "Organizational knowledge resources," *Decis. Support Syst.*, vol. 31, no. 1, pp. 39–54, 2001, doi: 10.1016/S0167-9236(00)00118-4.
- [26] M. I. Rapert and B. M. Wren, "Reconsidering organizational structure: A dual perspective of frameworks," *J. Manag. Issues*, vol. 10, no. 3, p. 287, 1998.
- [27] R. F. Hurley, G. T. M. Hult, E. Abrahamson, and S. Maxwell, "Innovation, Learning: An Organizational and Empirical Integration Examination," *J. Mark.*, vol. 62, no. 3, pp. 42–54, 1998.
- [28] G. Von Krogh, I. Nonaka, and M. Aben, "Making the most of your company's knowledge: A strategic framework," *Long Range Plann.*, vol. 34, no. 4, pp. 421–439, 2001, doi: 10.1016/S0024-6301(01)00059-0.
- [29] J. Nahapiet and S. Ghoshal, "Social Capital, Intellectual Capital and the Organizational Advantage," *Acad. Manag. Rev.*, vol. 23, no. 2, pp. 242–266, 1998, doi: 10.1007/978-1-4614-5013-9_3.
- [30] F. M. Horwitz, D. Bravington, and U. Silvis, "The promise of virtual teams: Identifying key factors in effectiveness and failure," *J. Eur. Ind. Train.*, vol. 30, no. 6, pp. 472–494, 2006, doi: 10.1108/03090590610688843.
- [31] A. Powell, G. Piccoli, and B. Ives, "Virtual Teams: A Review of Current Literature and Directions for Future Research," *Data Base Adv. Inf. Syst.*, vol. 35, no. 1, pp. 6–36, 2004, doi: 10.1145/968464.968467.
- [32] C. Mumbi and T. McGill, "An investigation of the role of trust in virtual project management success," *Int. J. Netw. Virtual Organ.*, vol. 5, no. 1, pp. 64–82, 2008, doi: 10.1504/IJNVO.2008.016003.
- [33] D. Fariborz, "Organizational Innovation: A Meta-Analysis of Effects of Determinants and Moderators," *Acad. Manag. J.*, vol. 34, no. 3, pp. 555–590, 1991, [Online]. Available: <http://amj.aom.org/cgi/doi/10.2307/256406>.

Tanika 3

ORIGINALITY REPORT

19%

SIMILARITY INDEX

16%

INTERNET SOURCES

13%

PUBLICATIONS

%

STUDENT PAPERS

MATCH ALL SOURCES (ONLY SELECTED SOURCE PRINTED)

5%

★ www.researchgate.net

Internet Source

Exclude quotes On

Exclude matches < 10 words

Exclude bibliography On