

Employee Engagement and Job Performance under Virtual Work Arrangement for Business Revitalization

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Abstract—This study aims at investigating the ramifications of the emergent paradigm of Work-From-Home (WFH) arrangements within the Hong Kong context. It examines the influence of job resources under WFH on work engagement on in-role performance and rigorously assesses the mediating role of work engagement within the nexus of job resources and in-role performance in the specific milieu of Hong Kong's WFH arrangement. Quantitative and cross-sectional research method was adopted. Research data was collected by random survey method from office employees in Hong Kong with WFH experience. The findings of the study show WFH in-role performance could be predicted by both job resources and work engagement. The mediation analysis shows work engagement completely mediates the relationship between job resources and in-role performance. The results suggest job performance can be sustained within the context of WFH arrangement in Hong Kong, contingent upon the provision of adequate job resources. Moreover, the enhancement of job performance might be realized through these job resources, particularly when an employee exhibits a high level of work engagement. It is imperative for organizations with WFH arrangements in this post-pandemic era in Hong Kong to adjust the job resources they provide, in addition to fostering elevated levels of work engagement.

Keywords—Work-From-Home (WFH), job resources, work engagement, work performance

I. INTRODUCTION

The sudden global pandemic due to the coronavirus disease (COVID-19) has brought about a new paradigm shift that has forced many Hong Kong organizations to adopt Work-From-Home (WFH) arrangements for their employees. This rapid switch surfaced challenges in managing human resources and their work performance. Indeed, the economic and social shock presented by the pandemic is likely to reshape how organizations perceive individuals and organizations about work, as well as how to revitalize the post-pandemic world to remain competitive. Firms, like Hasbro Hong Kong, decided to maintain this remote work as the new normal in the post-pandemic era. Recent research also predicted that WFH will continue in the post-pandemic era (e.g., Moens,

Lippens, Sterkens, Weytjens, & Baert, 2022). It would be a new challenge to organizations and employees in Hong Kong with their negative reception of WFH before the pandemic (Baruch & Yuen, 2000). From the human resource perspective, the top three concerns are keeping remote employees engaged, productive and connected (Sull *et al.*, 2020).

This study situates our recent work in the new context by investigating the relationship between WFH arrangements and employee in-role performance. It is grounded in the social exchange theory, where organizations can motivate employees by offering incentives to them in return for their contribution (Blau, 1964; Caillier, 2016). Previous studies have supported this theory by claiming a positive relationship between autonomy, intrinsic motivation and productivity under WFH arrangement (e.g., Rietveld, Hiemstra, Brouwer, & Waalkens, 2021). However, these studies were conducted in Western countries, where WFH is no stranger. In Hong Kong, the concept of WFH is relatively novel before the pandemic, and employees have had to adapt to this new experience. Indeed, a research gap exists regarding whether employees in Hong Kong, like their counterparts in Western cultures, can be similarly motivated by WFH arrangements, ultimately leading to enhanced job performance. Exploring this topic can provide valuable insights into the dynamics of remote work in the Hong Kong context and inform strategies for optimizing employee motivation and performance.

This study aims at exploring the correlation between work-from-home arrangements and in-role performance based on the Job Demands-Resources model (JD-R). Under the new remote work arrangement, job resources, referring to physical, social and organizational aspects of a job (Bakker & Demerouti, 2008) change. It could trigger a change in the motivational potential of job resources, including autonomy, supervisor and co-worker support, performance feedback (Naruse *et al.*, 2015) and learning and development (Deci & Ryan, 2000). This study aims to investigate whether these motivational job resources foster one's willingness to dedicate efforts to work as reported by

previous studies (e.g., Schaufeli, Bakker, Van Rhenen, 2009) under the work-from-home arrangement in Hong Kong.

As WFH is a new trend in Hong Kong, its impact on in-role performance is a concern of management and provides important insight for future work arrangements. To fill this empirical knowledge gap, this research investigates how the performance of employees could be maintained under the WFH arrangement. Additionally, we consider how job performance is affected in view of the changes in employee engagement. Specifically, this study investigates the correlation between changed job resources under a WFH arrangement and in-role job performance mediated by work engagement, from which suggestions in designing remote work arrangement could be provided to organizations in Hong Kong.

II. LITERATURE REVIEW

A. Job Resources under Work-from-home Arrangement

Job demands-resources (JD-R) model developed by Bakker & Demerouti (2007) specifies two essential working conditions, job demands and job resources, affecting employees' working activities. Job demands are job features that require efforts from employees, while job resources are motivation and support employees received. Job resources include multi-dimensions relate to physical, psychological, social and organizational aspects of a job that contribute to the accomplishment of one's work goals (Bakker & Demerouti, 2007). The existence of job resources could satisfy employees' psychological needs and provide employees with relatedness, competence, and autonomy (Prodanova & Kocarev, 2021). It occurs at different levels within an organization, including organizational, interpersonal, job and task levels (Bakker *et al.*, 2004). Apart from achieving work goals, job resources also support employees by reducing job demand and stimulating the development of employees (Bakker & Demerouti, 2008).

With the invention of new technology, WFH is now feasible and has become an alternative to work in an office setting. WFH represents job activities performed from other locations of the employee's choice or at the employee's home (Sellar & Peiris, 2021) that are characterized with a virtual working environment, distant communication and new working method (Prodanova & Kocarev, 2021). This new setting isolates employees from their organizations and co-workers physically but links them virtually. The study by Sellar and Peiris (2021) identified how WFH could be different from working at the premises of an organization and identified eight WFH factors, such as "supervisor's support and trust" and "reduced time for communication with co-workers". These WFH factors highlight the new work mode of WFH and imply the interaction between employees and their organization, the interaction between supervisors and subordinates and the interaction between co-workers' changes (Baruch, 2000). Considering the new mode of interaction, job resources on organizational, interpersonal,

job and task levels that an employee receives changed and reshaped employees' work tasks.

B. Job Resources and Work Engagement

Work engagement is a positive and fulfilling state of mind at work (Bakker & Demerouti, 2008). This engaged state of mind is characterized by a positive attitude and passion towards one's work and translates into work behavior (Engelbrecht, 2006). An engaged employee is full of energy, strongly involved and highly concentrated at work (Schaufeli *et al.*, 2002). The studies of Schaufeli & Bakker (2004) reported job resources could enhance work engagement. This correlation could be explained by the intrinsic and extrinsic motivational roles of job resources. Job resources provide personal growth and development opportunities that motivate employees intrinsically (Bakker & Demerouti, 2014). Besides, likelihood of goal achievement brought by job resources provides extrinsic motivation (Meijman & Mulder, 1998). Thus, job resources bring motivation and boost work engagement eventually.

Under WFH arrangement, job resources were modified, so employees' work engagement level could change. A gap in research is how would work engagement change with the change of job resources an employee received under the WFH arrangement? The first hypothesis proposes:

H1: Job resources under WFH positively relate to work engagement of employees in Hong Kong

C. Work Engagement and In-role Performance

In-role performance of individual employees contributes to the overall performance of an organization, so individual work performance is crucial to organization success (Li & Lin, 2019). Work engagement has been found to be a strong predictor of job performance (e.g., Rich, Lepine, & Crawford, 2010). This correlation could be explained by the positive emotion experienced by engaged employees (Green *et al.*, 2017). Positive emotion at work builds one's desire to explore, learn, growth and perform, which results in better performance (Fredrickson, 2001). Employees are expected to have better in-role performance when they WFH if they have a higher level of work engagement. The second hypothesis proposes:

H2: Work engagement positively relates to the in-role performance of employees in Hong Kong when there are WFH arrangements.

D. Job Resources and In-role Performance

Job resources include physical, psychological, social or organizational aspect of a job that enables an employee to be functional at work so that can achieve one's work goals (Demerouti & Bakker, 2011). Lack of job resources was found as a barrier towards positive work outcome, especially in demanding job, likes virtual work arrangements in the study of Hobfoll, Halbesleben, Neveu, & Westman (2018). Employees could have better in-role performance only if sufficient job resources support their remote work. The third hypothesis proposes:

H3: Job resources positively relate to in-role performance of employees in Hong Kong when there are WFH arrangements.

E. Mediation Effect of Work Engagement

Job resources were recognized as one of the drivers of work engagement based on job characteristics theory (Wingerden *et al.*, 2018). The theory delves deeper into the relationship between job characteristics and outcomes. With better job resources support under the WFH arrangement, work engagement is enhanced which could further improve one's work performance. Work engagement could be considered as a factor influencing how job resources affect one's in-role performance. The last hypothesis proposes:

H4: Work engagement mediates the effect of job resources on the in-role performance of employees in Hong Kong when there are WFH arrangements.

The four proposed correlations build the conceptual model in Fig. 1 for determining employees' in-role performance when there are WFH arrangements. Under the WFH arrangement, an engaged employee could perform well if their work is supported by sufficient job resources.

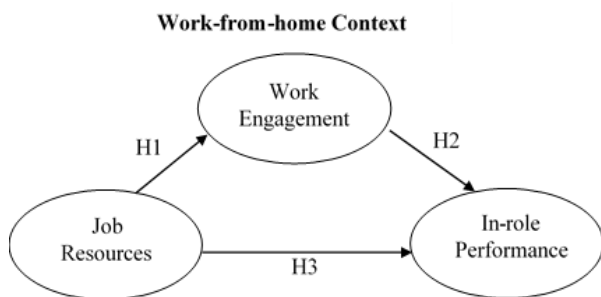


Fig. 1. Hypothesized model.

III. MATERIALS AND METHODS

Quantitative data was collected from employees with experience in work-from-home in Hong Kong through an online survey. It is a cross-sectional study which all variables were measured within a single survey. Procedural controls, for example, clear instructions and good order of survey questions (Podsakoff, MacKenzie, & Podsakoff, 2012), were employed to avoid common method bias. The targeted respondents are office staff in Hong Kong with at least five years of full-time work experience with experience in work-from-home for no less than one month. Respondents were recruited by purposive sampling and an invitation was posted on three popular social platforms in Hong Kong - Instagram, Facebook and WhatsApp- as an open recruitment, which linked interested participants to an online survey. A non-probabilistic sampling method is considered appropriate as

this study targets a specific predefined group – office workers with WFH experience in Hong Kong. Only those who passed the screening part were invited to complete the questionnaire. A total of 207 completed questionnaires were collected and provided valid responses for data analysis. This sample size is comparable to those WFH studies during COVID-19: $n = 199$ (Schade *et al.*, 2021); $n = 209$ (Galanti *et al.*, 2021).

Existing constructs from well-established scales in prior work are adopted to measure job resources, work engagement level and in-role performance under WFH arrangement with revised wordings. All items were measured by a seven-point Likert scale, where 1 represents strongly disagree and 7 represents strongly agree. Job resources under WFH arrangement and work engagement were measured by six-item and three-item constructs suggested by Radic, Arjona-Fuentes, Ariza-Montes, Han & Law (2020) respectively, with the composite reliability of 0.899 and 0.896 in their study. Job resources under WFH were measured in terms of the level of job support, work autonomy and motivation the respondents received. The three items measuring work engagement focused on the level of energy and enthusiasm of respondents when they WFH. In-role performance was measured by a five-item scale, which was extracted from the study of Goodman and Svyantek (1999). All items are listed in Table I.

IV. RESULT AND DISCUSSION

The conceptual model was tested in three phases. The data collected was first checked for reliability and validity of the measurement model. Second, descriptive statistics were presented. Finally, the significance of the hypothesized relationships in the structural model was tested by multiple regression with three control variables- sex, age, and job level and mediation analysis. These variables were included to reduce the potential influence of demographic characteristics.

A. Measurement Model

All variables loaded substantially on their relevant components that are above the recommended 0.7 thresholds as shown in Table I, therefore internal reliability of all constructs is satisfactory.

B. Descriptive Statistics

All respondents worked in an office setting in the last five years and are having WFH experience for at least one month. The majority of the respondents are women (58.5 %) and in the age group of 40 to 49 (58%). They mainly come from the sectors of education and training (44.95%), public service (11.6%) and manufacturing and trading (11.1%). Demographic characteristics of respondents are summarized in Table II.

TABLE I. MEASUREMENT MODEL ESTIMATION

Items	Cronbach's alpha	Item-to-total correlation
(1) Job Resources		
<i>(1a) Job Support</i>		
My manager helps and supports me when WFH		0.491
I am involved in improving my work processes when WFH		0.706
<i>(1b) Work Autonomy</i>		
I am consulted before objectives are set for my work when WFH	0.870	0.630
I can influence decisions that are important for my work when WFH		0.691
<i>(1c) Motivation</i>		
I receive the recognition I deserve for my work when WFH		0.757
The organization I work for motivates me to give my best job performance when WFH		0.742
(2) Work engagement		
I feel full of energy when I WFH	0.801	0.706
I am enthusiastic about my job when WFH		0.834
Time flies when I WFH		0.440
(3) In-role performance		
I handle tasks with proficiency when WFH		0.750
I fulfil all the requirements of my job when WFH	0.899	0.779
I perform well in my job when WFH		0.825
I plan and organize to achieve objectives of my job when WFH		0.810
I am able to meet deadlines when WFH		0.680

TABLE II. DEMOGRAPHIC STATISTICS OF RESPONDENTS

Items	Items	Count	Percentage
<i>Gender</i>	Male	86	41.5%
	Female	121	58.5%
<i>Age</i>	20–29	8	3.9%
	30–39	36	17.4%
	40–49	120	58%
	50–59	37	17.9%
	60–69	6	2.9%
<i>Industry</i>	Accounting and Finance	31	15%
	Engineering	5	2.4%
	Education and training	93	44.9%
	Information Technology	12	5.8%
	Public service	24	11.6%
	Logistics	11	5.3%
	Sales and Marketing	8	3.9%
	Manufacturing and Trading	23	11.1%
<i>Job position</i>	Basic level	104	50.2%
	Middle level	75	36.2%
	Top Management	28	13.4%

C. Hypotheses Testing

To test the relationships between the constructs, correlations have been tested and the findings are summarized in Table III. All three constructs are positively correlated significantly. The three constructs were tested further by regression analyses. To improve the explanatory power of the model, three control variables, sex, age, and job position were included. The regression analysis presents that job resources under WFH had a significant impact on the work engagement of employees in Hong Kong ($p < 0.05$; $\beta = 0.814$), so H1 is accepted. Moreover, work engagement is positively related to the in-role performance of employees in Hong Kong when WFH ($p < 0.05$; $\beta = 0.500$) that H2 is accepted. In-role performance was regressed on job resources and the relationship is found to be positively and statistically significant ($p < 0.05$; $\beta = 0.438$), so H3 is also accepted.

Mediation analysis was conducted by bootstrapping multiple regression using the module PROCESS Version 4.0 in SPSS aiming at identifying an observed relationship between job resources and in-role performance via the inclusion of a mediator—work engagement. Firstly, the result in Table IV shows the direct effect of work engagement ($\beta = 0.463$; $p = 0.000$) on in-role performance is statistically significant, but the direct effect of job resources ($\beta = 0.087$; $p = 0.166$) is insignificant.

When the indirect effect of job resources on in-role performance through work engagement is tested, the result of confidence level does not include zero as shown in Table V. It represents the indirect effect of mediation is significant. Work engagement positively and significantly mediates the relationship between job resources and in-role performance and H4 is accepted.

TABLE III. CORRELATION MATRIX

Variables	Minimum	Maximum	Mean	Standard Deviation	1	2	3
1. Job resources	3.33	7.00	4.96	0.89	1		
2. Work engagement	1.00	7.00	4.75	1.22	0.588**	1	
3. In-role job performance	3.40	7.00	5.52	0.89	0.443**	0.700**	1

(Note: **p < 0.01)

TABLE IV. DIRECT EFFECTS ON IN-ROLE PERFORMANCE

Variables	Coeff	Se	t	p	LLCI	ULCI
Constant	2.888	0.259	11.149	0.000	2.377	3.399
Job resources	0.087	0.063	1.392	0.166	-0.036	0.211
Work engagement	0.463	0.046	10.132	0.000	0.373	0.553

TABLE V. INDIRECT EFFECTS ON IN-ROLE PERFORMANCE

Variables	Effect	BootSe	BootLLCI	BootULCI
Work engagement	0.371	0.038	0.298	0.446

V. CONCLUSION

Theoretically, the results from this study enhance researchers' understanding about importance of engagement under the new work model, which can be followed by further research studies investigating effective ways to enhance engagement at work when an employee WFH. Further research could investigate how job resources required for WFH could be different from those needed by employees when they work in an office. In addition, further additional variables, such as job demands and self-efficacy, could be included in the theoretical model to better understand the new future of work.

Practically, the findings of this research suggest job performance could be sustained within the context of a WFH arrangement in Hong Kong, contingent upon the provision of adequate job resources, including managerial support, work autonomy, and intrinsic motivation, in a remote work setting. Moreover, the enhancement of job performance might be realized through job resources, particularly when an employee exhibits a high level of work engagement.

This finding improves the decision-making about workforce management (in the post-pandemic era) of corporations which spend a considerably large portion of their budgets in renting an office in commercial districts in developed cities, like Hong Kong SAR. It is imperative for organizations that currently offer or are contemplating the implementation of WFH arrangements in Hong Kong to conduct a thorough audit and adjustment of the job resources they provide. Without sufficient job resources support, maintaining employee performance after a change to WFH mode could be a problem. Moreover, assessing and enhancing the work engagement level of employees is also an essential task before switching to WFH mode. Engagement intervention should be done as needed. The findings build a foundation for human resources specialists to design proper remote work arrangements to ensure remote workers are functioning.

The methodological design of this cross-sectional study, characterized by its specific industry focus and the

constrained sample size, presents certain limitations with respect to the capacity to determine causal relationships. Also, the exclusive reliance on online data collection methods introduces potential biases, like selective memory recall and self-serving distortions in self-reporting. To enhance the robustness and applicability of future research findings, it is recommended that subsequent investigations expand this purview. A longitudinal study design would be beneficial to observe changes and potential causality over time.

Moreover, employing a diverse array of data collection methodologies and drawing from a broader sample base would likely enhance the reliability and generalizability of the research outcomes. By addressing these methodological considerations, future research can yield insights with a higher degree of validity applicable across a wider spectrum of contexts.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

June Fung conducted the research and analyzed the data; June Fung and Macy Wong wrote the paper; both authors had approved the final version.

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