EFFECTS OF DIGITAL ADDICTION ON WORK PERFORMANCE AMONG PRIVATE HIGHER EDUCATION ACADEMIC STAFF IN MALAYSIA

Joanna Tan Tjin Ai
Chie Qiu Ting
Lee Lai Meng

ABSTRACT

Technology, in recent years, has grown in leaps and bounds, finding its way into our daily lives. As highlighted in previous research, the dependence on digital devices for both work and personal use has brought about a loss of work productivity and a subsequent impairment on work performance. For academic staff in the private higher education sector, the utilization of digital devices has seen an increase since the start of online teaching and learning. Hence, this study must be conducted to investigate the effects of digital addiction on individual work performance on private higher education academic staff in Malaysia and to determine the level of digital addiction amongst private higher education academic staff. This cross-sectional survey collected primary data from 106 academic staff using convenience sampling. The scales utilized were the Digital Addiction Scale (DAS) and Individual Work Performance Questionnaire (IWPQ). Cronbach Alpha reliability analysis demonstrated that the overall scale and subscales of DAS and IWPQ were relatively stable and ranged from acceptable to very good reliability. Simple linear and hierarchical regression analysis results showed that digital addiction has an effect on academic staff's individual work performance. Out of the five constructs in the DAS, only Inhibiting Flow of Life had a significant effect on individual work performance. Findings also revealed that the majority of academic staff has reported moderate levels of digital addiction. Thus, precautionary steps should be taken to reduce the indulgent use of digital technology. Findings obtained from this study are important for the management of private higher education institutions in Malaysia, specifically human resource managers. They will be better equipped in devising strategies to help employees have better control of the use of digital devices and ensure that their work performance, as well as productivity, is not seriously affected.

Keywords: Digital addiction, Individual workplace performance, Private higher education, Academic staff

INTRODUCTION

The passing of the Private Higher Educational Institutions Act. (Act 555) in 1996 by the government has seen the emergence of many privately owned higher education institutions. This act provides establishment, registration, management, and supervision in privately owned higher education institutions. In short, these institutions are managed in terms of the quality of education provided (Nasional Malaysia Berhad, 2006). Prior to this, there were only 9 public universities and no private universities in Malaysia. However, according to Tapsir (2016), as of November 2015, the latest statistics indicated that there are 20 public universities, 111 private universities and university colleges, 402 private colleges, 34 polytechnics, and 94 community colleges with an estimated student population of 1.2 million.

As the number of private education institutions continues to grow, there is a constant need to look for ways to improve organizational performance. Colquitt et al (2010) mentioned that individual work performance has been considered as a significant predictor of organizational performance. It is important to understand that the education industry is no different from other industries and individual work performance plays a crucial in ensuring that quality of delivery is maintained. As the aim of an educational institution is to provide quality education for students who enroll in the programs offered, stakeholders too, need to be assured that the work performance of each academic staff must be competent to deliver knowledge in the best way to students. It is important to understand that the work performance of each teaching staff may serve to enhance or destroy an organization's performance in the industry. Improvements made to improve individual academic staff work performance will help enhance student learning and satisfaction. Ultimately, this will also lead to the institution having a competitive edge over others.

In the quest of improving the quality of education, the emergence of technology has provided an option for academic staff to explore new ways of attracting and retaining student attention. However, as technology develops and evolves, apart from being a tool in enhancing education, it has now found a way to integrate seamlessly into our daily lives on a personal or professional basis. This dependency on digital devices has led to a sense of helplessness as people are not able to function without them. New York Times (January 2017) reported that 84% of people cannot go a single day without their digital devices. The endless checking, replying to emails, and scrolling through social media is an act done before going to bed and the first act done in the morning. These actions have also seen an impact on individual workplace performance. For academic staff, the increased use of technology during the COVID-19 pandemic has also seen an impact on their work performance. Although this issue may not be new as digital addiction is a major problem that affects employee engagement and work productivity, it is of utmost importance to investigate this issue and take the necessary steps to prevent this. Rugai and Hamilton-Ekeke (2016) explained that digital addiction brings consequences such as loss of work productivity. Hence, this issue must be addressed by the management of private higher education institutions so that the work performance of academic staff is not further affected by this.

This study was conducted to investigate the effects of digital addiction on individual work performance on private education academic staff in Malaysia and to determine the level of digital addiction amongst private higher education academic staff. The

findings of this study will help the management, specifically, human resource managers, to be better equipped in devising strategies to help employees have better control of the use of digital devices.

LITERATURE REVIEW

Although digital addiction is not officially recognized in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), there have been calls of concern to include this as a disorder and for further research to be conducted on this (Cifolelli, 2019). According to Singh and Singh (2019), digital addiction is referred to an impulse control disorder that involves the obsessive use of digital devices, digital technologies, and digital platforms, i.e., internet, video game, online platforms, mobile devices, digital gadgets, and social network platform. Digital media, devices, and platforms are researched on their usage (obsessive and excessive) and the problems that it brings. The compulsive behavior shown among users of technological devices has also led to behavioral symptoms that are similar to any addictive disorder. Deterioration in work productivity is a cause of concern as excessive interaction with technology leads to over-exposure and over-use of technology. This results in a high dependency on digital devices where its negative impacts can be seen on an individual's well-being, mainly from the difficulty in maintaining a healthy balance between the use of technology and interacting with others (Rugai & Hamiliton-Ekeke, 2016).

The research conducted on various forms of addiction, including the Internet, smartphone, and social media has seen an effect on the work performance of employees in different industries. A study conducted on Information Technology (IT) employees in India by Priyadarshini et al (2020) revealed that social media addiction (SMA) has significant negative effects on employees' productivity. The fear of missing out (FOMO) has seen an excessive use and addiction to social media. This caused employees to be sleep deprived as they spent countless hours on social media either through chatting or scrolling for updates. The employees' physical health was also affected with participants stating they suffered from cervical or middle backache and eye strain. This study emphasized that work productivity was affected by social media addiction from 3 aspects. Employees failed to meet deadlines due to loss of time and engagement in non-work activities. Apart from this, work quality is compromised to meet deadlines. Lastly, social media addiction has seen employees putting in less productive hours and are often distracted. Main office work is neglected and there was little effort made to be productive. Employees were also unable to control the usage of devices to check their social media during team meetings and discussions with superiors.

Alam et al's (2014) study that was conducted among Malaysian young adults highlighted the negative effects of Internet addiction on work behaviors and interpersonal relationships. Results from this study indicated that Internet addiction had the most impact on participants' psychological aspects followed by problems in interpersonal relationships, health, work, and Internet addictive behavior. Variables that were associated with work and psychological aspects showed a maximum impact. The dependency on the Internet and problematic Internet usage caused this disorder where an excessive amount of time was spent on online friendships, online gaming, or gambling. The obsessive search for information from online sources and web surfing also caused an increase in screen time, resulting in a dependency. It was also noted that males faced more problems at work as a result of Internet addiction compared to females. However, females suffered from more health-related problems.

A qualitative study carried out by Li and Lin (2019) on smartphone addiction among young working professionals in China found that smartphone addiction has both positive and negative psychological effects on its users. Participants in this study explained that smartphones were helpful in terms of time management and work efficiency. Companies that allowed the use of smartphones created trust among their employees and allowed more effective communication to take place. On the other hand, the dependency on smartphones has also caused employees to be addicted, resulting in them becoming withdrawn and silent. The reliance on smartphones distracted employees from their job tasks and affected work performance as they frequently checked their smartphones without any self-control. When employees were unable to use their smartphones, they felt bad and this had a negative effect on work performance.

Although there were negative effects that were brought about by excessive use of social media and digital devices, moderate and controlled use can prove to be beneficial. Tulu (2017) conducted a study on 112 academic staff in a university located in Ethiopia to examine the impact of online social media platforms such as Facebook, LinkedIn, Twitter, Google+, Myspace using a focus on time spent on these platforms, the purpose behind the use, frequency of use, addiction status and access to the platforms. The majority of respondents (71.1%) reported that online social media (OSM) platforms were useful and helped them to be productive. 67% used OSM independently while 33% used them simultaneously with their work. Usage of OSM during off-working hours, for example, early morning, during coffee breaks, and late afternoons was positive and had a significant effect on productivity compared to using them during official working hours. 62% also stressed that the usage of OSM for a short while did not indicate that they were slacking, but was viewed more as a break from work. Academic staff perceived OSM as a necessity as they provided valuable sources of information that can help boost knowledge and awareness.

The studies above highlight the aspects that were caused by social media addiction, smartphone addiction as well as Internet addiction to show the severity of this issue among employees. Although the study by Tulu (2017) stressed that with moderate and controlled use of devices while online, there is still much to do to create awareness regarding this issue as many employees were unaware of their behavior when it came to handling social media.

METHODOLOGY

RESEARCH DESIGN

A cross-sectional survey research design was employed in this research study as there is still much to explore about patterns of digital addiction among academic members in private higher education institutions. It also allows the researchers to examine the predictive effect of digital addiction on individual work performance (Shaughnessy, Zechmeister & Zechmeister, 2015).

PARTICIPANTS AND SAMPLING

Participants consisting of academic staff in private higher education institutions were recruited using non-probability sampling methods via convenience and snowball sampling techniques. Participants were recruited from private higher education institutions across Northern, Centre, and Southern states of Perak, Selangor, Kuala Lumpur, and Johor in Malaysia. These states were selected as they were geographical locations in which private higher education institutions were predominantly located. As this research study was conducted during the COVID-19 pandemic (14 January 2021 to 30 June 2021) in which social distancing and movement restriction orders were still actively in place, the researchers relied on online correspondence with the private higher education institutions, contacts via colleagues, and social media platforms to recruit participants. Furthermore, some academic members may feel more comfortable responding to the questionnaire if they are recruited through a colleague with whom they are familiar.

A total of 145 responses were recorded in the online Qualtrics survey but after data cleaning, only a total of 106 usable responses were retained for data analysis. The parameters for inclusion were that survey respo for the items in Digital Addiction Scale by Kesici and Tunc (2018) and Individual Work Performance Questionnaire by Koopmans et al. (2014) had to be complete as this study intended to examine the psychometric properties of both scales.

As shown in Table 1, the participants' age ranged between 20 years to above 60 years. There were more female participants (65.1%) than males (34.0%). A majority of them were Malaysians (96.2%) while 2.8% were of other nationalities. In regards to ethnicity, a higher proportion of participants in this sample were Chinese (63.2%), followed by Malays (25.5%), Indians (7.5%), and other ethnicities (3.8%). Most of the participants (40.6%) had between 1 – 5 years of working experience in the current workplace, followed by 6-10 years (20.8%) and 16-20 years (16.0%) of working experience. In terms of job designations, most of the academic members were lecturers (53.8%), followed by senior lecturers (24.5%), Assistant Professors (13.2%), Associate Professors (2.8%), Professors (2.8%), and tutor (0.9%).

Table 1: Descriptive statistics of academic members' demographics

Variables	Participants (N=106)
Age [years (range)]	
20-25	1 (0.9%)
26-30	8 (7.5%)
31-35	28 (26.4%)
36-40	17 (16.0%)
41-45	18 (17.0%)
46-50	15 (14.2%)
51-55	9 (8.5%)
56-60	6 (5.7%)
>60	4 (3.8%)
Gender	
Male	36 (34.0%)
Female	69 (65.1%)
Missing data	1 (0.9%)
Nationality	
Malaysian	102 (96.2%)
Others	3 (2.8%)
Missing data	1 (0.9%)
Ethnicity	
Malay	27 (25.5%)
Chinese	67 (63.2%)
Indian	8 (7.5%)
Others	4 (3.8%)
Working experience in current workplace (years)	
1-5	43 (40.6%)
6-10	22 (20.8%)
11-15	14 (13.2%)

16-20	17 (16.0%)
>20	10 (9.4%)
Job designation	
Professor	3 (2.8%)
Associate Professor	3 (2.8%)
Assistant Professor	14 (13.2%)
Senior Lecturer	26 (24.5%)
Lecturer	57 (53.8%)
Tutor	1 (0.9%)
Missing data	2 (1.9%)

INSTRUMENTS

The online survey consists of three sections as follows:

Demographics. The first section (Section A) consisted of six demographic questions: age, gender, nationality, ethnicity, years of service in the higher education institution, and job designation.

Digital Addiction Scale (DAS). The second section (Section B) comprised of the DAS by Kesici and Tunc (2018). It consists of 19 items that were scored using a 5-point Likert scale (1=Totally disagree to 5 = Totally agree). The scale measures digital addiction across five dimensions: overuse, non-restraint, inhibiting the flow of life, emotional state, and dependence. An average point for each dimension is calculated (i.e., points for each dimension are summed up and divided by the number of items). The expected point range is 1.00 (the lowest) and 5.00 (the highest), and higher points relatively indicate higher levels of digital addiction. The Cronbach's alpha reliability coefficient of the DAS was 0.874. The test-retest reliability coefficient was 0.779. Criterion validity measurements between the DAS with Young's Internet Addiction Test Short Form (YIATSF), Smart Phone Addiction Scale – Short Form (SPAS-SF), Digital Game Addiction Scale (DGAS), and Facebook Addiction Scale (FAS) were 0.833, 0.756, 0.600, and 0.447, respectively and significant at the 0.001 level.

Individual Work Performance Questionnaire (IWPQ). The third section (Section C) consisted of the IPWQ by Koopmans et al. (2014). It consists of 18 items and measures individual work performance across three dimensions: task performance (TP), contextual performance (CP), and counterproductive work behavior (CWB). The TP and CP dimensions are scored using a 5-point Likert scale (0 = seldom to 4 = always) while CWB is scored from 0 = never to 4 = often. Average scores for each dimension are obtained and higher scores indicate higher levels of TP, CP, and CWB. IWPQ has a good construct validity represented by its convergent and discriminant validity (Koopmans et al., 2014). Internal consistency ranges from good to excellent: TP ($\alpha = 0.78$), CP ($\alpha = 0.85$), and CWB ($\alpha = 0.79$).

PROCEDURE

The online survey was created using Qualtrics. Participants can access the survey through the link as follows: https://utarpsy.au1.qualtrics.com/jfe/form/SV_cA8aQ1VMyAtrrDv or a QR code. Prior to the actual study, a pilot study using 40 participants was conducted to test the reliability of the scales and to examine if there was a need to remove any items within the scale. At the point of the pilot study, the Cronbach Alpha values obtained for the subscales (see Tables 2 and 3) ranged from acceptable to very good reliability while the overall reliability of both scales was very good (DAS $\alpha = 0.921$; IWPQ $\alpha = 0.896$). Thus, all items in both scales were retained.

Table 2: Reliability analysis of Digital Addiction Scale (Kesici & Tunc, 2018) and its five dimensions (N=40)

Dimension	Cronbach Alpha value (α)
Digital Addiction Scale – overall (19 items)	0.921
Overuse (5 items)	0.863
Non-restraint (3 items)	0.892
Inhibiting flow of life (4 items)	0.886
Emotional state (4 items)	0.867
Dependence (3 items)	0.745

Table 3: Reliability analysis of Individual Work Performance Questionnaire (Koopmans et. al, 2014) and its three dimensions (N=40)

Dimension	Cronbach Alpha value (α)
Individual Work Performance Questionnaire – overall (18 items)	0.896
Task performance (5 items)	0.948
Contextual performance (8 items)	0.935
Counterproductive work behavior (5 items)	0.674

The online survey was distributed through the following methods: 1) contacting academic members via the email address in the staff directory, 2) writing to the private higher education institutions to officially seek permission to share and disseminate the research study, 3) contacting fellow academic members in other private higher education institutions and requesting help to share to their colleagues and 4) promoting through social media platforms such as WhatsApp and Facebook. All communications with participants and the private higher education institutions were attached with basic information about the research study purpose, assurance of voluntary participation, and confidentiality of collected information as well as the rights to withdraw from the research study without consequences. The communications also contain the link to the Qualtrics survey and QR code.

ETHICAL APPROVAL

The research study has been reviewed and approved by the UTAR Scientific and Ethical Research Committee [Ref: U/SERC/180/2020] on 4 November 2020.

RESULTS

RELIABILITY OF DIGITAL ADDICTION SCALE AND INDIVIDUAL WORK PERFORMANCE (N = 106)

Cronbach Alpha values obtained for the subscales using a sample of 106 academics (see Tables 4 and 5) showed that the reliability of the overall scale and subscales were relatively stable and ranged from acceptable to very good reliability. The overall reliability of both scales was also very good (DAS α = 0.901; IWPQ α = 0.859).

Table 4: Reliability analysis of DAS (Kesici & Tunc, 2018) and its five dimensions (N=106)

Scale and subscales	Cronbach Alpha value (α)
Digital Addiction Scale – overall (19 items)	0.901
Overuse (5 items)	0.827
Non-restraint (3 items)	0.862
Inhibiting flow of life (4 items)	0.829
Emotional state (4 items)	0.747
Dependence (3 items)	0.627

Table 5: Reliability analysis of IWPQ (Koopmans et. al, 2014) and its three dimensions (N=106)

Scale and Subscale	Cronbach Alpha value (α)
Individual Work Performance Questionnaire – overall (18 items)	0.859
Task performance (5 items)	0.902
Contextual performance (8 items)	0.921
Counterproductive work behavior (5 items)	0.788

LEVEL OF DIGITAL ADDICTION AMONGST PRIVATE HIGHER EDUCATION ACADEMIC STAFF

The overall mean score for digital addiction among private higher education staff was 3.33 (SD = 0.634). To categorize the scores of digital addiction as a measure of the level of addiction, a cut-off score for low, moderate, and high levels of addiction had to be determined. Using the mean and SD of digital addiction scores, scores between 1.000 – 2.699 were categorized as 'Low, scores ranging between 2.700 – 3.999 were categorized as 'Moderate', and scores between 4.000 – 5.000 were categorized as 'High'. As shown in Table 6, the majority of the participants (63.2%) had moderate levels of digital addiction, followed by high levels of digital addiction (18.9%) and low levels of digital addiction (17.9%).

Table 6: Frequency analysis of DAS scores

		Frequency	Percent (%)
Digital Addiction	Low	19	17.9
	Moderate	67	63.2
	High	20	18.9
Total		106	100.0

EFFECTS OF DIGITAL ADDICTION ON INDIVIDUAL WORK PERFORMANCE

Simple linear regression was conducted to first analyze the predictive effects of digital addiction on individual workplace performance as seen in Table 7. The results demonstrated that digital addiction scores significantly predicted individual work performance F (1, 103) = 4.220, p<.05, with an adjusted R^2 of 0.04.

Table 7: Simple linear regression analysis examining digital addiction as a predictor of individual work performance

Variable	B	95% CI	β	t	p
(Constant)	2.53	[2.05, 3.00]		10.55	0.000
Digital addiction score	0.15	[0.03, 0.30]	0.19	2.05	0.042

Note: R^2 adjusted =0.04, CI = confidence interval for B

CONSTRUCTS OF DAS AS PREDICTORS OF PRIVATE HIGHER EDUCATION ACADEMIC STAFF'S IWPQ

To examine the construct within the DAS that truly contributed to the significance of the model, a hierarchical regression was conducted (see Table 8). The five constructs of DAS (Overuse, Non-restraint, Inhibiting Flow of Life, Emotional State, and Dependence) were input across three steps and it was found that Inhibiting Flow of Life was the only construct of digital addiction that significantly predicted individual work performance F (1, 103) = 6.63, p<.05, with adjusted R^2 of 0.05. The remaining constructs of Overuse, Non-restraint, Emotional State, and Dependence were not significant predictors of individual work performance.

Table 8: Hierarchical regression analysis examining digital addiction as a predictor of individual work performance

Variable	B	95% CI	β	t	p
Step 1					
Inhibiting Flow of Life	0.14	[0.03, 0.26]	0.25	2.58	0.011*
Step 2					
Inhibiting Flow of Life	0.11	[-0.02, 0.24]	0.19	1.76	0.082
Overuse	-0.00	[-0.13, 0.12]	-0.01	-0.07	0.949
Non-restraint	0.06	[-0.05, 0.18]	0.13	1.06	0.290
Step 3					
Inhibiting Flow of Life	0.12	[-0.10, 0.25]	0.20	1.77	0.080
Overuse	0.00	[-0.13, 0.13]	0.01	0.06	0.956
Non-restraint	0.09	[-0.05, 0.22]	0.18	0.18	0.200
Emotional State	-0.02	[-0.17, 0.13]	-0.02	-0.03	0.791
Dependence	-0.04	[-0.17, 0.08]	-0.08	-0.08	0.486

Note: R^2 = 0.06 for Step 1 (p<.05); R^2 =0.07 for Step 2; R^2 =0.08 for Step 3; CI = confidence interval for B

DISCUSSION AND IMPLICATIONS

The majority of the participants in this study indicated a moderate level of digital addiction. As academicians, the usage of digital technology is already a part of work. However, this situation could be exacerbated due to the COVID-19 pandemic where all private higher education institutions have moved to online teaching and learning. The high percentage could be due to academic staff spending a large amount of time on their digital devices for preparation, delivery of lessons, administrative work, and student consultations. The Internet has become paramount in the search for information and a connection to the rest of the world. All these contribute toward their dependence on digital technology. This can be dangerous as this over-exposure and overuse of technology results in a dependence on digital devices that negatively impacts the individual's well-being as they will neglect to maintain a healthy balance between using technology and socializing outside of it (Rugai & Hamiliton-Ekeke, 2016).

Findings from this study provided empirical evidence that digital addiction has an effect on the individual work performance of academic staff in private higher education institutions in Malaysia. This is consistent with past research that other addictions such as internet, smartphone, and social media addiction may interfere with an individual's work by distracting them and making them unable to stay focused. Research has shown that multitasking has negative effects on the performance of specific tasks (Ophir,

Nass, & Wagner, 2009). The hierarchical regression analysis indicated that only the component of Inhibiting the flow of life in the DAS had a predicting effect on individual work performance, whilst the other four components, Overuse, Non-restraint, Emotional state, and Dependence did not. The statement in this factor such as ***"I am unaware of what happens around me when I deal with digital devices"***, ***"I have missed many opportunities because a lot of time was spent on digital devices"*** and ***"The digital devices prevent me from doing my responsibilities related to home and school"*** resonate with the participants in this study. Plausible reasons as to why academic staff related to these items could be attributed to the current situation of working from home. The prolonged stint of working from home since March 2020 could be a significant contributor to the perception that digital devices and technology have become more important and integrated into the participants' lives. The challenge of balancing matters at work and home has also made academic staff feel helpless while digital devices slowly inhibit and change their routine.

As mentioned by Colquitt et al. (2010), the individual work performance of an individual has a considerable impact on an organization's performance. Thus, in the competitive education industry in Malaysia, academic staff's individual work performance is paramount as it contributes towards the quality of education delivered to students, ultimately impacting the reputation and image of the private education institution. Thus, as the findings of this study indicate that digital addiction has implications on academic staff's individual work performance, it needs to be addressed promptly to ensure that it does not affect the organization's performance.

The findings from this study have several implications. In terms of psychotherapeutic intervention, it is recommended that the usage of digital technology fall within moderate and controlled use. Based on recommendations by Young (2007) for feasible and practical therapeutic techniques to be practiced by individuals for internet addiction, the following can also be adapted for digital addiction.

1) Practice the opposite. Break from routines and disrupt the patterns of digital usage by coming up with new schedules. For example: if the individual goes online as soon as he or she arrives home, it is suggested instead to refrain from doing that, instead to do other therapeutic things in the home such as gardening or cooking.
2) Setting goals. The individual to come up with specific, achievable goals regarding the amount of time spent on digital devices. For example, if the individual remains online on the internet all day long on Saturdays and Sundays for non-work-related purposes, then the individual should specify the number of hours to be spent.
3) Abstinence from certain applications: Encourage abstinence to only those applications that the individual is unable to control such as Facebook, Instagram, online games, etc. Discontinuing the use from time to time is encouraged and individual to shift their attention to other therapeutic alternatives such as gardening, exercising, cooking, etc.
4) Personal inventory: The individual to list the activities that they are missing out on or used to engage in because they cannot find the time due to digital addiction.

Other suggestions would be for management in universities to organize more talks and webinars that create awareness on the importance of identifying burnout, digital addiction, and ways to reduce the dependency on digital devices. Other than that, counseling services by certified counselors for staff who might be suffering from digital addiction can be provided as an intervention. The administration of universities must see the need to help staff overcome this problem to perform more efficiently at accomplishing their job tasks.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

The results of this study should be interpreted in the context of the study's limitations which are largely associated with the generalizability of the findings and the cross-sectional nature of the research design. There are several directions for future research one of which would be to conduct a longitudinal study to examine the changes in patterns in work performance across different working contexts. Alternatively, the level of digital addiction across the different developmental lifespans can be considered as an expansion to this study.

CONCLUSIONS

In conclusion, this study revealed the level of digital addiction amongst academic staff in private higher education institutions in Malaysia as well as the predicting effect of digital addiction on individual work performance. With this knowledge, the management of private higher education institutions may use this study to guide them to come up with various strategies to address the problem of digital addiction on their academic staff's individual work performance.

The results of this study have contributed to the body of knowledge on digital addiction in Malaysia specifically in the higher education context. This is important as the higher education industry has a key role to play in Malaysia's economic growth and development. It not only provides employment but educates future leaders and meets the manpower needs of the nation. Thus, being able to better understand the effects of digital addiction on academic staff's work performance will ultimately affect the quality of the educational process as it is directly influenced by the academic staff's work performance. Lastly, this study has also contributed towards the managerial perspective, by providing suggestions on therapeutic techniques and methods that academic staff and University management can practice and implement to combat the effects of digital addiction on workplace performance.

ACKNOWLEDGEMENTS

This research project is funded under the UTARRF (Universiti Tunku Abdul Rahman Research Fund).

REFERENCES

Alam, S. S., Hazrul Nik Hashim, N. M., Ahmad, M., Che Wel, C. A., Nor, S. M., & Omar, N. A. (2014). The negative and positive impact of internet addiction on young adults: Empericial study in Malaysia. *Intangible Capital*, *10*(3), 619-638. https://doi.org/10.3926/ic.452

Cifolelli, K. (2019, July 11) *Digital addiction in the workplace*. Retrieved from https://www.sbam.org/Resources/ArtMID/404/ArticleID/3466/Digital-addiction-in-the-workplace

Kesici, A. & Tunc, N.F. (2018). The development of the digital addiction scale for the University students: Reliability and validity study. *Universal Journal of Educational Research*, *6(*1), 91-98.

Koopmans, L., Bernaards, C., Hildebrandt, V., van Buuren, S., van der Beek, A.J. & de Vet, H.C.W. (2012). Development of an individual work performance questionnaire. *International Journal of Productivity and Performance Management*, *62*(1), 6-28.

Koopmans, L., Bernaards, C.M., Hildebrandt, V.H., Buuren, S. van, Beek, A.J. van der, Vet, H.C.W. de (2014). Improving the Individual Work Performance Questionnaire using Rasch analysis. *Journal of Applied Measurement, 15*(2), 160-175.

Li, L., & Lin, T. T. (2019). Smartphones at work: A qualitative exploration of psychological antecedents and impacts of work-related smartphone dependency. *International Journal of Qualitative Methods*, *18*, 160940691882224. https://doi.org/10.1177/1609406918822240

Rugai, J., & Hamiliton-Ekeke, J-T. (2016). A review of digital addiction: A call for safety education. *Journal of Education and E-Learning Research, 3*(1), 17-22.

Ophir, E., Nass, C., & Wagner, A. D. (2009). Cognitive control in media multitaskers. Proceedings of the National Academy of Sciences, 106, 15583–15587. https://doi.org/10.1073 /pnas.0903620106

Priyadarshini C., Durbey, R. K., Kumar Y., & Jha, R. R. (2020). Impact of social media addiction on employees' wellbeing and work productivity. *The Qualitative Report*, *25*(1), 181-196. https://nsuworks.nova.edu/tqr/vol25/iss1/12

Singh, Amarjit Kumar, & Singh, Pawan Kumar, "Digital Addiction: a conceptual overview" (2019). Library Philosophy and Practice (e-journal). 3538. https://digitalcommons.unl.edu/libphilprac/3538

Tulu, D. T. (2017). Should online social medias (OSMs) be banned at work? The impact of social medias on employee productivity in ambo University, a case study. *Research in International Business and Finance*, *42*, 1096- 1102. https://doi.org/10.1016/j.ribaf.2017.07.044

Young, K.S. (2007). Cognitive-behavioural therapy with Internet addicts: Treatment outcomes and implications. CyberPsychology and Behaviour, 10, 671–679.

Joanna Tan Tjin Ai
Faculty of Arts and Social Science
Universiti Tunku Abdul Rahman, 31900 Kampar, Malaysia
Email: tanta@utar.edu.my

Chie Qiu Ting
Faculty of Arts and Social Science
Universiti Tunku Abdul Rahman, 31900 Kampar, Malaysia
Email: chieqt@utar.edu.my

Lee Lai Meng
Faculty of Arts and Social Science
Universiti Tunku Abdul Rahman, 31900 Kampar, Malaysia
Email: llee@utar.edu.my