HONG KONG JOURNAL OF SOCIAL SCIENCES

香港社會科學學報

第一的第 57 期 (2021 春/夏) Vol. 57 Spring/Summer 2021

The Acceptance of Digital Workforce Environments among Millennials

Melissa Shahrom, Sharidatul Akma Abu Seman, Nur Atiqah Rochin Demong

Faculty of Business and Management, Universiti Teknologi MARA, Puncak Alam Campus, Selangor, Malaysia

Received: May 19, 2021 ▪ Reviewed: June 21, 2021 ▪ Accepted: July 25, 2021 ▪ Published: August 30, 2021

Abstract:
When dealing with the COVID-19 worldwide pandemic, one of the most recent breakthroughs in the evolution of labor, work practices, and workplaces is the digital workforce. As the workplace becomes digital, most companies have reshaped the work environment into a crowdsourcing environment, which allows for collaboration in many new and effective ways. Among those affected by this situation are millennials. Due to the limited job opportunities, they should be wise to strategize and use their skills to survive in these challenging times. Courses on the digital workforce have been introduced in several educational institutions in Malaysia to expose students to the crowdsourcing environment. Thus, a study on millennials' acceptance and use of the digital workforce platforms is important for sustainable social development. A Technology Acceptance Model (TAM) was used to analyze the factors influencing the acceptance and use of digital workforce platforms. The students taking the digital workforce course from the Universiti Teknologi MARA (UiTM), Malaysia, were randomly chosen as the sample for this study because of their experiences and familiarity with crowdsourcing platforms. An online self-completion questionnaire was used as the main instrument, and the data received by the respondents were analyzed using the structural equation modeling (SEM) method. The results show that the perceived ease of use significantly affects perceived usefulness. Nevertheless, the perceived usefulness has shown a failure to predict attitude (β = - 0.024, t = 0.213) compared to perceived ease of use. The attitude and perceived usefulness significantly affect the use of the digital workforce platform. Interestingly, perceived ease of use failed to predict the use of the digital platform with β = - 0.018, t = 0.436.

Keywords: digital workforce, crowdsourcing platforms, COVID-19, acceptance level, millennials, digital skills, workforce environment.

千禧一代对数字化劳动力环境的接受程度

摘要:
在应对新冠肺炎全球大流行时，劳动力、工作实践和工作场所发展的最新突破之一是数字劳动力。随着工作场所变得数字化，大多数公司已将工作环境重塑为众包环境，这允许以许多新的有效方式进行协作。受这种情况影响的人包括千禧一代。由于工作机会有限，他们应该明智地制定战略并运用自己的技能在这些

充满挑战的时代生存。马来西亚的几家教育机构都开设了数字劳动力课程，让学生接触众包环境。因此，研究千禧一代对数字劳动力平台的接受和使用对可持续社会发展非常重要。技术接受模型(谭)用于分析影响数字劳动力平台接受和使用的因素。由于他们的经验和对众包平台的熟悉程度，从马来西亚玛拉技术(UiTM)学习数字劳动力课程的学生被随机选择作为本研究的样本。以在线自填问卷为主要工具，采用结构方程模型（扫描电镜）方法对受访者收到的数据进行分析。结果表明，感知易用性显着影响感知有用性。然而，与感知易用性相比，感知有用性无法预测态度（β= −0.024，吨=0.213）。态度和感知有用性显着影响数字劳动力平台的使用。有趣的是，感知易用性未能预测数字平台的使用，β = −0.018，吨 = 0.436。

关键词：数字劳动力、众包平台、新冠肺炎、接受度、千禧一代、数字技能、劳动力环境。

1. Introduction

There is no denying that the COVID-19 virus has already shaken the world regarding health, safety, economy, and society. The fact is, the COVID-19 pandemic has severely affected the economic development of many countries, and as a result, many people have been unemployed. Based on the latest report from the Department of Statistics Malaysia, the unemployment rate jumped to 5.0 percent in June 2020. In Malaysia, the closure of operations for most businesses during the Movement Control Order (MCO) extended until June 2021 has affected job losses and made job seekers find it difficult to get a job. The increased unemployment also will directly impact youths such as new graduates who are also receiving economic contraction due to limited job offers, limited career development, low job satisfaction, and low salary.

As stated in the International Labour Organization and Asian Development Bank (2020) report, when paid employment is difficult to obtain, young workers turn to self-employment as an alternative method to make a living. Among working youth, the range of percentage of self-employed is 64 percent in South Asia to 35 percent in Southeast-Eastern Asia and the Pacific. Among the reasons given for the self-employed are to earn a higher income or to be free from being tied to the company other than the inability to get a job and a good salary.

Protecting and supporting employment and promoting economic growth are important measures that can reduce the impact on the labor market. The government of Malaysia has introduced many programs which enable citizens to generate income through online crowdsourcing platforms, which are getting popular among digital workers and employers. The platforms allow potential employers to post jobs that freelancers or digital workers can bid to complete the tasks.

One of the initiatives to encourage youths to be involved in crowdsourcing platforms is introducing the Digital Workforce course program in academic programs. Since the course has been introduced in several local universities, the students have shared many success stories and challenges. Hence, it is crucial to understand the students' acceptance of the crowdsourcing platforms and its associated factors.

2. Literature Review

Technology has permitted the creation of a new production style: outsourcing or crowdsourcing (Howe, 2006). Organizations must focus on developing a method to entice their stakeholders to adopt or adjust the sourcing strategy (Colbert et al., 2016). The digital workforce environment enables companies to realize economies of scale. Many features of the digital workplace had to be swiftly modified by organizations (Lenart-Gansiniec, 2021).

Crowdsourcing platforms offer digital workforce environments through a variety of services and activities. Citizenship science, the military, mapping and location, human intelligence jobs, journalism, medical diagnosis, medical research, gaming, and other activities such as commercial solutions are examples of these (Brown, 2018). Crowdsourcing platforms, also known as digital workforce platforms, are regarded as a must-have technology asset due to their ability to increase flexibility, reduce operational costs, improve productivity, and efficiency, all of which benefit all parties involved in the environment, namely the job provider, job worker (freelancer), and platform owners or enablers (Abhigna et al., 2018).

Crowdsourcing platforms are a type of crowd technology that attracts talent from all over the world and allows jobs to be done efficiently and quickly. As a result, crowdsourcing in journalism is viewed as a model for distributing the reporting function across many people or, more broadly, as a sourcing strategy that connects an organization with motivated and capable crowds. Crowdsourcing research is still in its infancy (Soliman, 2013). Because of the fast growth of information and communication technologies (ICTs) for the labor industry, organizations in many sectors are increasingly using the technology (Zakariah et al., 2012).

The concept of crowdsourcing is quite open for anyone who has one or more tasks that need to be completed. All required is a platform, usually online, a crowd willing to do the task, and most likely a mutual benefit where individuals can also be crowdsourcers in crowdsourcing (Ikediego et al., 2018; Rasp et al., 2020).

Giving computerized admittance to individuals will bring their inspiration up in open cooperation applications, increase the variety of thoughts, and give a lift to actively involved (Srivastava & Mostafavi, 2018). The simplest approach to enhance the adoption of a crowdsourced solution is to integrate the numerous persons who will execute it (Guittard et al., 2015).

3. The Acceptance of Digital Workforce Environment

Automation of manual operations and the development of new worker kinds in terms of location and work-time were among the modifications. The concept of working from anywhere, on any platform, at any time has certainly evolved tremendously since the beginning of the epidemic and continues to develop. Malaysia Digital Economy Corporation (2020) conducted a survey named "Digital Workforce COVID Impact Survey 2020" and discovered that over 60 percent of firms had begun to adapt to work from home using technology and digital platforms. Furthermore, they discovered that 67 percent of respondents mentioned COVID-19 as having a significant to critical influence on their organization.

Digital natives and digital immigrants, particularly industry practitioners, faced several problems in the digital era. A lack of IT/digital skills plays a significant role in workforce development in impacting other challenges and necessitates more learning time and specialized training. More macro-impacts on others are caused by a lack of analytical thinking and coping with complexity, as well as a lack of interdisciplinary thinking and action, a lack of competence in decentralized decision-making, and a scarcity of workers with sufficient skillset within the labor market (Ozkan-Ozen & Kazancoglu, 2021; Wagenknecht et al., 2017). As a result, it is critical to assess the level of acceptability of the digital workforce environment to ensure successful workforce growth in an organization by integrating digital technologies into organizational structure and increasing system interaction. Whereas most companies encounter problems due to a lack of information technology or digital abilities, job workers, also known as the workforce, should have essential digital skills (Ozkan-Ozen & Kazancoglu, 2021).

Stakeholders in the digital workforce environment must be exposed through training, various communication mediums, and information programs to anticipate and prepare for change and promote collective awareness and involvement to improve their knowledge, technical and soft skills, and embrace their doubts and fears. This training should not be immediately relevant to workers' occupations, but it is beneficial for broadening their skill set (Molino et al., 2020).

In terms of digital abilities, individual adoption and utilization of technology can only be predicted using individual differences such as seniority, age, and education level (Skoumpopoulou et al., 2018). Furthermore, income support programs should be structured to offer financial stability and compensate for lost wages without undercutting work incentives, allowing job seekers to return to work quickly by taking a new position at a reduced pay level (Organisation for Economic Co-operation and Development, 2019). In this new century, the advanced workforce has gotten a significant mechanism for associations with innovation in human existence, setting new open doors for humans, making their issues simpler, quicker, more straightforward, and less expensive.

3.1. Technology Acceptance Model (TAM)

To capture individual acceptance and use of information technology in organizations, IT acceptance research has been built on theories such as the Theory of Planned Behavior (TPB) (Taylor & Todd, 1995; Ajzen, 1985) and the Technology Acceptance Model (TAM) (Davis, 1989; Davis et al., 1989). The theory of technology acceptance is the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) was proposed as a comprehensive synthesis of previous technology acceptance models and theories, including TAM and the Theory of Planned Behaviour. The TAM model was used in this study to assess millennials' acceptance of the digital workforce environment, as shown in Figure 1. TAM predicts two characteristics that influence individual usage behavior: perceived utility (PU) and perceived ease of use (PEOU) (Skoumpopoulou et al., 2018). PU denotes a circumstance in which utilizing a certain system improves individual work performance, whereas PEOU denotes a condition in which a person uses a specific system without exerting any effort (Davis, 1989; Davis et al., 1989). Individual beliefs influence attitudes toward behavior, and behavioral intention affects actual behavior in adopting new technology inside the organization (Davis et al., 1989).

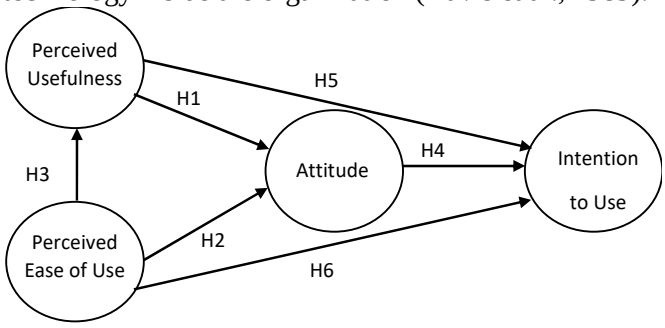

Figure 1. TAM model (Davis, 1989)

Based on the theoretical assumption, the following hypotheses were developed:

H1: The perceived usefulness has a positive effect on the attitude to use the digital workforce platforms.

H2: The perceived ease of use has a positive effect on the attitude to use the digital workforce platforms.

H3: The perceived ease of use has a positive effect on the perceived usefulness to use the digital workforce platforms.

H4: The attitude has a positive effect on the intention to use the digital workforce platforms.

H5: The perceived usefulness has a positive effect on the intention to use the digital workforce platforms.

H6: The perceived ease of use has a positive effect on the intention to use the digital workforce platforms.

4. Methodology

This paper investigated the acceptance of digital workforce platforms among millennials in Malaysia based on TAM. In this study, TAM was divided into four aspects: perceived usefulness, perceived ease of use, attitude toward using, and actual system use, as indicated in Figure 1.

4.1. Participants and Procedures

With non-probability sampling, a purposive sampling technique was utilized throughout this study. Since this research emphasizes millennials' adoption of new workforce platforms, we selectively chose our target respondents among a group of undergraduate students who took a Digital Workforce course within four months duration in one of the local universities in Malaysia. In this course, students must register in a digital platform and experience themselves as digital workers by fulfilling all tasks such as bidding for the job, completing the job, turn-over completed the task, and receiving the payment as a digital worker. The overall process of experience can capture their overall acceptance of the usage of digital platforms. The data were collected through an online survey within two weeks. The study's nature and goals were outlined in a cover letter, emphasizing the strict confidentiality of respondent material. The measurement components were tailored from the study by Constantinides et al. (2013). The G-Power software calculates the minimum sample size based on a statistical power level of 80% and 5% significance. A minimum sample size of 77 was required.

4.2. Common Method Variance (CMV)

When self-reported questions were used to collect the data, common method variance needs to be investigated, as the data collected were obtained from the same respondents (Podsakoff et al., 2012). This research carefully planned the design of the study's procedures and used marker variables as statistical controls to reduce the CMV. The marker variable was created in accordance with the study by Lin et al. (2015). With markers as an exogenous variable, the differences of the significant effects were less than 10% in the path coefficient and R^2 value. Therefore, we concluded that there was no major concern here with the CMV.

4.3. Demographic Profile

Table 1 displays the composition of the respondents, among which 19.1 % were male, and 80.9 % were female. The ratio was indicative of the gender distribution that was commonly found in public universities in Malaysia. Most of the respondents were from the Selangor branch campus, followed by Perlis. The different number of respondents is due to the number of classes offered for this subject for each respective branch. In comparison, most of the respondents (89%) were within the age range of 21-23 years old, followed by 41 (9.8%) within 24-26 years old; the remaining ones were above 26 years old.

Table 1. Profile of respondents

	Frequency	**Percentage**
Gender		
Male	340	81.0
Female	80	19.0
Age		
21-23	374	89.0
24-26	41	9.8
27-30	1	0.2
Above 30	3	0.6
Campus		
Jengka	6	1.4
Johor	7	1.7
Kedah	56	13.3
Kelantan	6	1.4
Melaka	22	5.2
Perlis	101	24.0
Puncak Alam	147	35.0
Sarawak	68	16.2
Terengganu	7	1.7
TOTAL	**420**	

5. Data Analysis

This section investigated and analyzed the effect among all variables of TAM, based on the statistics and analysis of the collected questionnaires.

5.1. Data Cleaning

Before analyzing the data, the collected survey was screened for its normality test and cleaned for outliers. Data normality in this study was evaluated using the statistical power analysis online (WebPower, 2019). The Mardia's multivariate skewness ($\beta = 4.740$, $p < 0.01$) is higher than ± 3, and Mardia's multivariate kurtosis ($\beta = 45.843$, $p < 0.01$) is higher than ±20. Therefore, the use of PLS-SEM is justified in this study. Furthermore, the outliers were examined to identify extremely large and influential values that can influence the regression results. For examining the outliers among the data set, a threshold is set at ± 3 standard deviations. Out of 433 collected data, thirteen cases were deleted from the full data set; 420 usable responses remained.

5.2. Measurement Model Assessment

The Partial Least Squares Structural Equation Modelling (Ringle et al., 2015) was used to analyze the research model. Our study methodology has been validated through a two-stage methodology, which first analyses the evaluation model and follows the structural model evaluation (Anderson & Gerbing, 1988). Convergent validity, discriminative validity, and

reliability have been used for the measurement model. As seen in Table 2, the minimum cut-off values of all loads (Hair et al., 2017) were above 0.50. The overall derived variance of all AVEs was above 0.50, which was adequate for convergency validity (Fornell & Larcker, 1981). Further, the composite reliability of all constructs was in the range from 0.803 and 0.952, passing the 0.708 threshold (Hair et al., 2017), providing support for the reliability of the construct. Then, the discriminant validity of the measured constructs was examined in contrast with the inter-construct correlations similarities between the square root of the AVE constructs (Fornell & Larcker, 1981). As seen in Table 2, it has been shown that the square root has been higher than the correlations, indicated that discriminant validity was obtained.

Table 2. Measurement model

Construct	Items	Loadings	CR	AVE
Attitude	A1	0.884	0.952	0.798
	A2	0.886		
	A3	0.897		
	A4	0.888		
	A5	0.911		
Perceived Ease of Use	PEU1	0.802	0.932	0.696
	PEU2	0.844		
	PEU3	0.824		
	PEU4	0.858		
	PEU5	0.780		
	PEU6	0.891		
Perceived Usefulness	PU1I	0.892	0.936	0.785
	PU2	0.871		
	PU3	0.887		
	PU4	0.894		
Use	USE1	0.847	0.813	0.685
	USE2	0.807		

Table 3. Discriminant validity

	1	2	3	4
1. ATT	0.893			
2. PEOU	0.811	0.834		
3. PU	0.821	0.734	0.886	
4. USE	0.112	0.153	0.099	0.828

5.3. Structural Model Assessment

After the measurement model was established, the analysis moved to structural model evaluation. The existence of a strongly correlated construct was tested using a collinearity test. The results showed that the inner VIF values of all constructs are less than 5 (Hair et al., 2017) (range from 2.166 to 4.321), which indicated that collinearity was not a problem in this study. Furthermore, as suggested by Hair et al. (2017), the hypotheses were tested using a bootstrapping procedure of 1000 resamples. Table 4 shows structural modeling assessments exhibiting the results of the various hypotheses assessments, each of which had been confirmed.

Overall perceived usefulness failed to predict attitude; therefore, H1 was unsupported (β = - 0.024, t = 0.213). Perceived ease of use predicted attitude (β = 0.452, t = 11.459) and perceived usefulness (β = 0.734, t = 22.063). H2 and H3 were confirmed. The results were also similar for attitude and perceived usefulness, which significantly affect the use of the digital platform. Hence H4 and H5 were supported. Interestingly, perceived ease of use failed to predict the use of the digital platform with β = - 0.018, t = 0.436, indicating that H6 was not supported.

Table 4. Structural model analysis

	Relationship	Std. Beta	Std. Error	t-value	p-value	LL	UL	f^2	Decision
H1	PU--> ATT	-0.024	0.113	0.213	0.416	-0.217	0.157	0.479	Not Supported
H2	PEOU -->ATT	0.452	0.039	11.459	p<0.001	0.388	0.516	0.408	Supported
H3	PEOU -->PU	0.734	0.033	22.063	p<0.001	0.668	0.780	1.168	Supported
H4	ATT --> USE	0.186	0.079	2.366	p<0.001	0.050	0.310	0.000	Supported
H5	PU --> USE	0.490	0.043	11.448	p<0.001	0.420	0.560	0.000	Supported
H6	PEOU --> USE	-0.018	0.110	0.162	0.436	-0.197	0.160	0.012	Not Supported

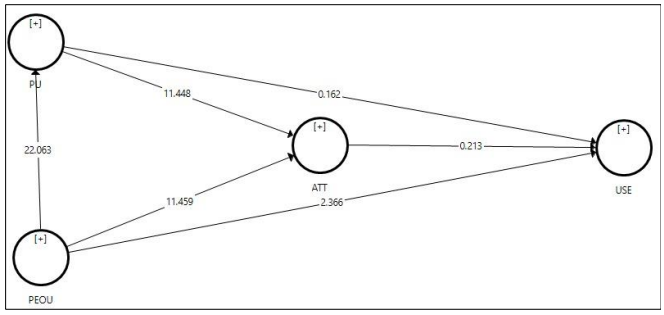

Figure 2. Findings

Next, the explanatory power of the model was measure. According to Cohen (1988), R^2 for endogenous latent variables varies from zero to one (i.e., 0.26 substantial, 0.13 moderate, and 0.02 weak). The evidence showed that the R^2 values had a substantial degree of explanatory capacity, dor perceived usefulness (0.539) and attitude (0.769) but low explanatory power on the use of the platform (0.024). The effect sizes (f^2) were calculated to assess the impacts of exogenous latent constructs on endogenous latent constructs, using the guideline by Cohen (1988) in which f^2 values of 0.02 (small), 0.15 (medium), and 0.35 (large) effects. The results indicated that attitude, perceived ease of use, and perceived usefulness had no effect in producing the R^2 for use (0.000). Meanwhile, perceived ease of use (0.408) and perceived usefulness had a substantial effect (0.479) towards attitude. In addition, the perceived ease of use also had a substantial effect on perceived usefulness, with an effect size of 1.168.

6. Conclusion

TAM was used to explain digital workforce platforms' usage behavior, as shown in Figure 1. Perceived usefulness denotes a circumstance in which utilizing a certain system will improve individual action, whereas perceived ease of use denotes a condition in which a person uses a specific system without exerting any effort (Davis, 1989). The results explain that the perceived usefulness of the digital workforce platforms was affected by the perceived ease of use. Moreover, the attitude towards using was affected by perceived ease of use but not by perceived usefulness. Thus, the authorities need to motivate students and increase their awareness about the importance of creating a digital profile on crowdsourcing platforms as an alternative for their future careers. The institutions need to revise their program structures and embed digital skills in students learning experiences since digital skills are crucial to compete in the digital workforce environment. Finally, it can be concluded that the students used the platforms

due to their perceived usefulness rather than perceived ease of use. One of the reasons which contributed to this result is numerous scams and unethical activities on most platforms. Hence, students need to do their due diligence on both the recruiter and the job before deciding and selecting the legitimate job offers. The research outcomes will help the authorities design and revise the digital workforce policy and supplement the evidence base to address future employment trends.

7. Limitations and Further Study

The study was limited to the students of Universiti Teknologi MARA, Malaysia. Nevertheless, the study can be extended to all freelancers who use crowdsourcing platforms as a career platform, either on a permanent or part-time basis. In addition, a comprehensive study of the acceptance and effectiveness of this crowdsourcing environment to organizations or employers is essential. Therefore, combining quantitative and qualitative information aids in understanding the realities that people experience with crowdsourcing environments, which can then be used to draw more relevant outcomes.

Acknowledgments

This work was supported by Dana UiTM Cawangan Selangor (DUCS), UiTM 600-UITMSEL (PI.5/4) (037/2020).

Authors' Contributions

Melissa Shahrom designed the research and data collection and was in charge of overall direction and planning.

Sharidatul Akma Abu Seman made substantial contributions to the methodological design of the work; or the acquisition, analysis, or interpretation of data.

Nur Atiqah Rochin Demong made significant contributions to the literature review portion, including synthesizing and summarising relevant publications, discussing the theoretical background, and developing the study's hypotheses.

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