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A Structural Equation Modelling Approach on Determinants of Working Adults' Choice to Further Study in Malaysian Online Distance Learning Higher Education Institutions

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	Abstract
<p>Article History</p> <p>Article Submission 12 November 2022</p> <p>Revised Submission 24 December 2022</p> <p>Article Accepted 4 February 2023</p>	<p>The aim of this study is to evaluate the direct relationship between university image and administrative quality with attitude and choice among online distance learning (ODL) learners in online distance learning higher education institutions in Malaysia. This study is very important to ODL higher education institutions because it will give insight into ODL higher education institutions to formulate a strategy to increase the number of ODL learners studying in their institutions. In an online learning environment, maintaining the optimum number of students in the system is very crucial in order to sustain in the future. The research framework of this study contains two independent variables which are university image and administrative quality, attitude as a mediator, and working adults' choice as a dependent variable. This study assesses the direct relationship between university image and administrative quality towards attitude and the attitude toward working adults' choices. Then, the indirect relationship between university image and administrative quality with working adults' choices mediated by attitude was assessed. Primary data were utilized in this study and collected by using a survey questionnaire which was adopted and adapted from earlier studies. 302 clean data were used in the data analysis by employing the structural equation modeling technique. The findings of this study reveal that university image and administrative quality are two important antecedents to attitude and working adults' choices. Further, Therefore, ODL higher education institutions must place a strong emphasis on attitude as it is a crucial mediating factor between university image and administrative quality to working adults' choice. This mediating effect will ultimately strengthen the working adult's decision to study at an ODL higher education institution.</p> <p>Keywords: University Image; Administrative Quality; Choice to Further Study; Online Distance Learning</p>

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Introduction

Many workers and adults are eager to further their studies without leaving their job. Working adults around the world are trying to find opportunities to continue studying to increase their knowledge and improve their skills in the industry. Today, many working adults have started thinking about how they can further improve their careers in the future. The number of higher education institutions that offer online distance learning (ODL) is growing rapidly today. Many universities that previously only focused on face-to-face learning have started offering online distance learning at their universities. This is due to a large number of working adults who want to continue their studies and want to study part-time (Bennion et al., 2011). Many conventional universities have begun aggressively offering their academic programs via online distance learning. With the increasing number of universities that offer academic programs in online distance learning, then individuals who wish to continue learning part-time through online distance learning need to make the right choice of higher education institutions that offer online distance learning (Haghshenas, 2016). Online distance learning is a learning method where students do not need to attend face-to-face to learn. The students can study even if they are in an area very far from the university by using the e-learning platform. It can reach a very large number of students and offers very flexible learning. The online distance learning method can also reduce constraints such as time, distance, and also the cost of learning. Many individuals, when choosing a higher education institution, have made the wrong choice of online distance learning higher education institutions (Fidalgo et al., 2020). In Malaysia, most public universities started offering their academic programs online distance learning when countries around the world were hit by the Covid-19 epidemic where all students did their studies online. In Malaysia, there are two types of higher education institutions, namely public higher education institutions and private higher education institutions. Because there is a high demand from students to continue their studies to a higher level, the number of higher education institutions has increased by a large amount and it is also due to the increase in government spending and government policies to promote education (Ruswahida et al., 2014). It is also added to the country's continuous need for labor resources (Ariffin et al., 2014). Currently, only three universities offer online distance learning programs, namely Open University Malaysia, Wawasan University, and Asia e-University. The increasing number of universities that offer online distance learning, has created intense competition among institutions of higher learning in Malaysia (Osman, et al., 2021). An increase in the number of universities offering online distance learning academic programs will increase the risk that there will be universities that will compromise the quality of online learning which will result in a negative impact on students in gaining knowledge for their future careers (Osman, et al., 2021). The purpose of this study is to assess the influence of university image and administrative quality on attitude and working adults' choice directly and indirectly among students of ODL higher education institutions. The results of this study will benefit higher education institutions in formulating strategies to get students to study at their institutions. This study will help ODL higher education institutions understand how crucial it is to consider prospective students' decisions to continue their education at ODL higher education institutions. This study will also benefit policymakers of higher education institutions in Malaysia in formulating higher education policies that need to be followed by online distance learning (ODL) higher education institutions..

Literature Review

Participation Kenedy (1977) suggested that the image has two different parts, namely functional, where it was related to intangible stimuli and it was easy to measure, and emotional. It was related to psychological conditions that will be noticeable in feelings and attitudes. Palacio et al. (2002) in their study on university image, agreed with Kennedy's (1997) position and proved that university image was formed through cognitive and affective components., although the affective part was more influential on the formation of the global image. These researchers also prove that the cognitive component of the image of the university affects the affective component of the image. Meanwhile, Wilson (1999) in his study on college and university images suggests that images included cognitive and communicative processes, also a result of perception. According to Fram (1982), the university image was usually seen as a Gestalt (organized as a whole), so the

university image often included ideas about the faculty, curriculum, and teaching quality. To truly understand the image of the university, the university must study current students, alumni, and, the local community. In this way, Arpan et al. (2003) found academic attributes, athletic attributes, and new media coverage, but only academic attributes were consistent across groups. The image of the university has a great impact on student attitudes (Herrero et al., 2016). The image of the university was an important antecedent in influencing students' attitudes in choosing a higher education institution for them to continue their studies (Yoon & Uysal, 2005). Bridges et al. (2011) supported that image has a strong influence on attitude and Elliot et al. (2011) said affective image can affect attitude. Azoury and Khoury (2014) have found that the effective university image positively influences the attitude of students in choosing higher education for them to continue studying. Manzoor et al. (2020) in their study on 223 international students have found university image has a positive and significant effect on students in choosing which higher education institution they will choose. Palacio et al. (2002) have done a study on the effect of university image on university students in Spain and the results of their study found that university image has a positive and significant effect on student attitudes. This is supported by Butt and Rehman (2010) who also found that the image of the university has a positive and significant effect on the attitude of students in higher education institutions in Pakistan. Ali et al. (2021) have also found in their study that the image of the university has a positive and significant effect on forming the attitude of students in higher education institutions. Erdoğan and Tütüncü (2015) in their study on university students in Turkey have found that image has a positive and significant influence on attitude. Seo et al. (2020) in their study on university students in South Korea have found that student attitudes are positively and significantly influenced by university image. Ma (2021) in his study on the students of leading universities in Taiwan to see the effect of university reputation and image on the university of choice students has found that the image of the university has a positive and significant direct effect on the university of choice of students. Pau et al. (2010) in their study on university students in Mauritius have shown that image research has a strong influence on student choice by showing a positive and significant effect. A transparent and logical understanding of administrative matters was a very important factor influencing attitude and student choice. According to Li (2020), students' first exposure to the university is through admissions and registrar services. Therefore, providing high-quality service to students contributes to the student's attitude toward the university. Administrative staff need to provide fast, friendly service, have specific working hours, and can guide students (Arena et al., 2013 & Osman et al., 2018). Trained administrative staff who can provide complete information to students must be a priority to be employed (Osman, 2020). Tsinidou et al. (2010) stated that the main desire of the students is to be given the right guidance and advice by the administrative staff. Not much has been described that the quality of administrative services is closely related to the attitude of a student in making a choice where they want to continue studying in a higher education institution (Kuo & Ye, 2009; Osman et al., 2018). Whatever experience students have, they want high-quality administrative support in addition to high teaching quality (Wiers-Jenssen et al., 2002). Sadiq and Shaikh (2004) in their study have found that contact with personnel was one of the most important factors mentioned by the students when evaluating administrative quality in choosing their university.

Based on the above hypotheses' development, the following hypotheses were proposed for this study:

H1: There is a relationship between administrative quality and working adults' attitude toward ODL higher education institutions.

H2: There is a relationship between administrative quality and working adults' choice toward ODL higher education institutions.

H3: There is a relationship between working adults' attitudes and working adults' choice toward ODL higher education institutions.

H4: There is a relationship between university image and working adults' attitude toward ODL higher education institutions.

H5: There is a relationship between university image and working adults' choice of online ODL higher education institutions.

H6: There is a mediating effect of attitude on the relationship between administrative quality and working adults' choice toward ODL higher education institutions.

H7: There is a mediating effect of attitude on the relationship between university image and working adults' choice toward ODL higher education institutions.

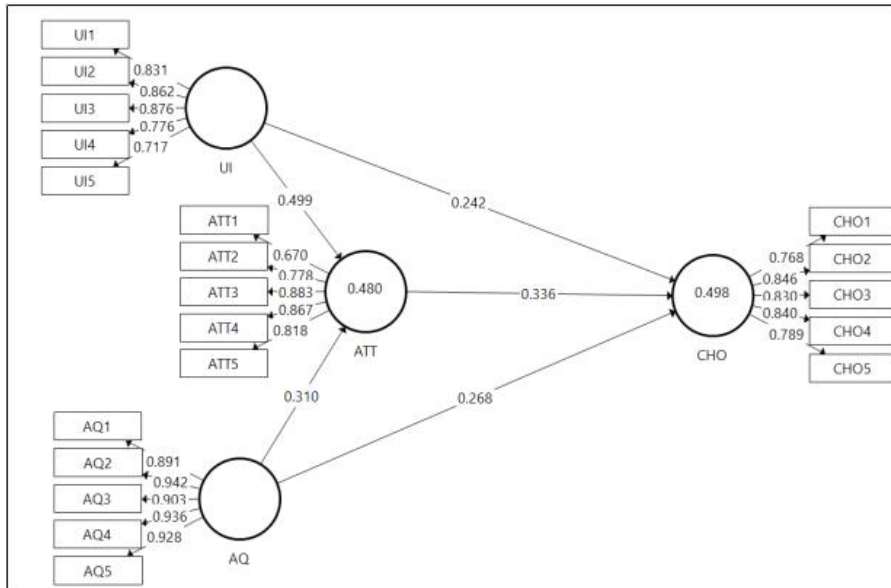


Figure 1. Specified Model

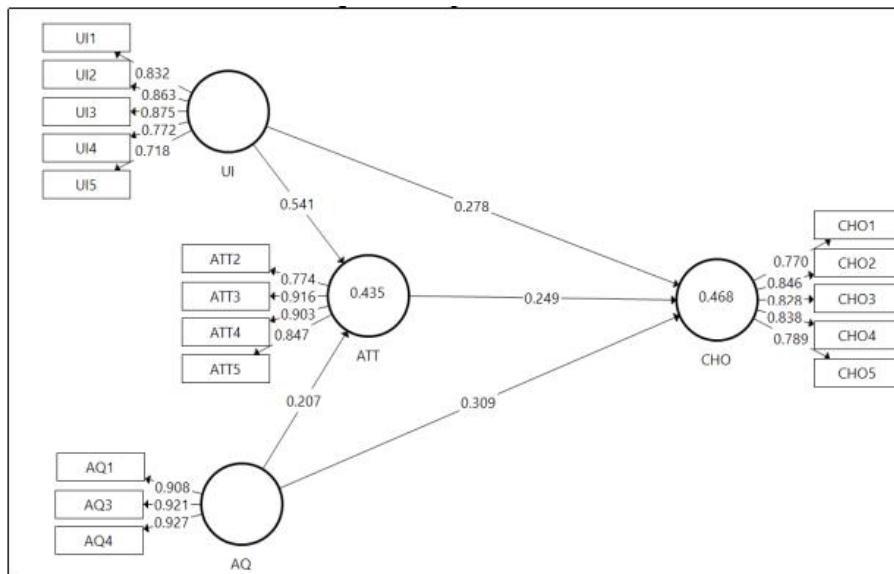


Figure 2. Re-specified Model

Methodology

Students who were studying in ODL higher education institutions in Malaysia were selected for this study. This study employed primary data and a survey instrument was adopted for data collection. The measurement items used in the survey questionnaire for this study were developed with a thorough assessment of previous studies to obtain suitable measurements that were being regularly used and have strong reliability and validity. Survey questionnaires were sent via email to the targeted respondents. This study adopted the non-probability sampling technique of purposive sampling to collect data due to the unavailability of the sample frame. In this study, there was a total of 20 observed variables constituted of the exogenous variables and the endogenous variable measurement. University image construct consists of 5 measurement items,

administrative quality consists of 5 measurement items, attitude constructs consist of 5 measurement items, and working adults' choice construct consists of 5 measurement items. A five-point Likert scale was utilized ranging from strongly disagree to strongly agree to measure all constructs' measurement items. Out of 420 questionnaires distributed, 319 were returned. This made-up a 75.95% response rate and it was sufficient to analyze the data by employing the structural equation modeling technique (SEM). Subsequently, after data screening and removing the outliers, 302 questionnaires were found to be clean and ready to be analyzed. Table 1 showed the respondents' profiles of the sampled ODL students. Smartpls3 was adopted in this study to perform the multivariate data analysis and test the proposed hypotheses. Additionally, the measurement model and structural model evaluation procedures also were conducted by using Smartpls3.

Table 1. Respondents' Profile

		Frequency	percent
Gender	Male	207	69%
	Female	95	31%
Age	< 30 years	156	52%
	31 - 40 years	124	41%
	41 - 50 years	17	6%
	51 - 60 years	5	1%
	> 60 years	0	0%
Status	Single	174	58%
	Married	114	38%
	Divorced	14	4%
	Widowed	0	0%
Level of Study	Certificate	8	3%
	Diploma	69	23%
	Bachelor	167	55%
	Master	58	19%
Employ	Public Sector	103	34%
	Private Sector	172	57%
	Own Business	27	9%
	Unemployed	0	0%

Results

Data Analysis

Common Method Bias

In the management field, one of the main issues faced by the researcher was common method bias. The problem aroused after variance was deemed to represent the variables, but represent the measurement method of the area being studied instead. This study adopted Harman's single-factor test method to assess whether there was an issue of common method bias in this study. After conducting Harman's single factor test, the principal factor shows 37.9% which established the absence of common method bias since the principal factor did not hold most of the variance explained. This is consistent with Podsakoff and Organ, (1986) who recommended there was no problem related to common method bias when variance explained by the principal component fraction was not more than 50%

Measurement Model

The PLS-SEM algorithm was used to assess and verify the constructs' measurement validity and reliability. As recommended by Hair et al. (2021), there were two vital elements in PLS-SEM

which were the reliability and validity of the outer goodness model for the study. Initially, the specified model was established (Figure 1), and after early outer loading reliability and validity assessment, one item from the attitude and two items from administrative quality constructs were deleted due to the loading of less than 0.7 which resulted in the construct validity of Average variance Extracted (AVE) below the 0.5 threshold. Low item loadings also caused the Hetrotrait-Monotrait (HTMT) ratios have failed to meet the requirements. After the re-specified model was established (Figure 2) and after the lower loading items deletion, all constructs obtained an AVE of a minimum of 0.5 thresholds with a minimum AVE of 0.663 and maximum AVE of 0.844 (Table 2). This showed the convergent validity establishment for all constructs. Further, Table 2 also demonstrated the composite reliability for all constructs ranging from 0.907 to 0.942, which was higher than the threshold of 0.7 as recommended by Hair et al. (2017). Then, the establishment of discriminant validity was assessed to ensure its presence in this study by assessing the cross-loading measurement items. The results of the assessment have shown all item loadings were higher than their respective cross-loadings (Table 2). The establishment of discriminant validity was continued with the Hetrotrait-Monotrait (HTMT) ratios assessment and the result has shown that all four constructs' ratios were less than 0.9 (Table 3) as suggested by Henseler et al. (2014). Therefore, it can be concluded that this study has demonstrated the reliability and validity of all latent constructs as recommended by Hair et al. (2021).

Table 2. Constructs Reliability, Validity & Items Loading

Construct	Item	Loading	Cronbach Alpha	Composite Reliability	Average Variance Extracted
AQ	AQ1	0.908	0.908 (0.851, 0.940)	0.942 (0.911, 0.962)	0.844 (0.769, 0.893)
	AQ3	0.921			
	AQ4	0.927			
UI	UI1	0.832	0.871 (0.815, 0.911)	0.907 (0.872, 0.934)	0.663 (0.580, 0.735)
	UI2	0.863			
	UI3	0.875			
	UI4	0.772			
	UI5	0.718			
ATT	ATT2	0.774	0.882 (0.826, 0.926)	0.920 (0.885, 0.948)	0.742 (0.659, 0.821)
	ATT3	0.916			
	ATT4	0.903			
	ATT5	0.847			
CHO	CHO1	0.770	0.873 (0.814, 0.913)	0.908 (0.869, 0.935)	0.664 (0.572, 0.743)
	CHO2	0.846			
	CHO3	0.828			
	CHO4	0.838			
	CHO5	0.789			

Table 3. Hetrotrait-Monotrait (HTMT) Ratio

	AQ	ATT	CHO
ATT	0.498 (0.314, 0.691)		
CHO	0.610 (0.419, 0.673)	0.638 (0.474, 0.777)	
UI	0.500 (0.322, 0.682)	0.715 (0.564, 0.817)	0.650 (0.410, 0.772)

Structural Model

The structural model evaluation was conducted by calculating the path coefficient (β) together with the coefficient of determination (R^2) value (Hair et al., 2021). PLS technique was used to bootstrap 5000 sub-samples to assess the path coefficient significant level. Table 4 demonstrated the hypotheses testing statistical results of path coefficients (Beta), t-statistics, p-value, and confidence interval. For hypothesis 1, the statistical result demonstrated administrative quality has a positive and significant influence on attitude ($\beta=0.207$, $t=3.146$, $p=0.002$), hence H1 is supported. For hypothesis 2, the statistical result showed that administrative quality has a positive and significant influence on working adults' choices ($\beta=0.309$, $t=3.705$, $p=0.0001$), thus, H2 is well supported. For hypothesis 3, the statistical result confirms that attitude has positively and significantly influenced working adults' choices ($\beta=0.249$, $t=3.333$, $p=0.001$), hence, H3 is supported. For hypothesis 4, it was demonstrated that university image has a strong positive and significant direct effect on attitude ($\beta=0.541$, $t=9.326$, $p=0.0001$), therefore, H4 is supported. For hypothesis 5, it has shown that a university's image has a positive and significant direct effect on working adults' choice ($\beta=0.278$, $t=2.770$, $p=0.006$), therefore, H5 is supported. To assess the mediating relationship hypotheses, the estimated path coefficient is considered statistically significantly different from zero at the 5% significance level when the p-value is less than or equal to 0.05 or when 0 is not straddled between lower level confidence of interval and upper-level confidence of interval. For hypothesis 6, it was revealed that attitude positively and significantly mediate the relationship between academic quality and working adults' choice ($\beta=0.052$, $t=2.297$, $p=0.022$, LLCI=0.017 ULCI=0.106), hence, H6 is supported. For hypothesis 7, it was shown that attitude positively and significantly mediated the relationship between university image and working adults' choice ($\beta=0.135$, $t=2.885$, $p=0.004$, LLCI=0.055 ULCI=0.244), hence, H7 is supported. Table 4 showed the summary of the hypotheses testing results. Table 4 also showed the effect size which measured the extent of an effect that was independent of the sample size. The values of f^2 were in the range of 0.020 to 0.150 (small), 0.150 to 0.350 (medium), or larger or equal to 0.350 (large) (Cohen, 1992). In this study, the range of effect size was from 0.066 to 0.417 (small to large). Also, Table 4 demonstrated that Q^2 values were above zero signifying that the values were well reconstructed and showed the model has good predictive relevance.

Table 4. Hypotheses Testing Results, f^2 & $Q^2_{predict}$

Hypotheses	Beta	T Statistics	P Values	f^2	$Q^2_{predict}$	LLCI 2.50%	ULCI 97.50%	Decision
H1: AQ -> ATT	0.207	3.146	0.002	0.135				Supported
H2: AQ -> CHO	0.309	3.705	0.0001					Supported
H3: ATT -> CHO	0.249	3.333	0.001	0.066				Supported
H4: UI -> ATT	0.541	9.326	0.0001	0.417				Supported
H5: UI -> CHO	0.278	2.770	0.006	0.083				Supported
H6: AQ -> ATT -> CHO	0.052	2.297	0.022			0.017	0.106	Supported
H7: UI -> ATT -> CHO	0.135	2.885	0.004			0.055	0.244	Supported
ATT					0.421			
CHO					0.411			

Discussion

This study aims to evaluate the direct influence of administrative quality and university image on attitude and working adults' choice and also to evaluate the mediating effect of attitude on the relationship between administrative quality and university image with working adults' choice among students of ODL higher education institutions. The results of the above statistical analysis clearly show that administrative quality has a positive and significant direct influence on attitude ($\beta=0.207$) and working adults' choice ($\beta=0.309$). This clearly shows that administrative quality

plays an important role in producing a positive attitude for prospective students in choosing a place where they want to continue their studies at a higher level. Therefore, it is very important for ODL higher education institutions to emphasize administrative quality so that a positive attitude can be formed, and subsequently, it will encourage prospective students to choose ODL higher education institutions as a place for them to continue their studies at a higher-level height. Further analysis found that attitude has a mediating effect on the relationship between administrative quality and working adults' choices ($\beta=0.052$). This shows the role of attitude as a mediator in ensuring that administrative quality affects working adults' choices effectively. Therefore, ODL higher education institutions should strengthen the administrative quality in their respective institutions so that high and effective administrative quality will be able to attract and influence prospective students to choose ODL higher education institutions as a result of the formation of a positive attitude toward continuing to study will be strengthened. The ODL higher education institutions must ensure that the administrative staff who deal with prospective students are competent and well-trained in providing the best service and guidance. Administrative staff must be friendlier to students and always be able to give guidance to students so that students can experience the best quality of service from administrative staff.

After that, the results of the next statistical analysis show that the image of the university has a strong direct influence on attitude ($\beta=0.541$). Since the image of the university has a strong direct influence on attitude, it is very important for ODL higher education institutions to pay serious attention to forming a strong image for ODL higher education institutions so that with a strong image, it will be able to form the attitude of the students to encourage them to register as a student at the university. The right attitude is very important for students in deciding to choose a place where they will continue their studies. Next, the results of the statistical analysis also show that the image of the university also has a direct influence on working adults' choices ($\beta=0.278$). This shows in choosing which institution the students will make the choice to continue studying, prospective students will be more inclined to choose ODL higher education institutions that have a strong image and this will give them the confidence to continue their studies at the institution. Then, the results of the statistical analysis show that attitude has a mediating effect on the relationship between university image and working adults' choice ($\beta=0.135$). This again shows that attitude plays a very important role in ensuring that the image of the university has a significant impact on working adults' choices. The perception of prospective students about the image of the university is very important to attract prospective students to continue their studies. The management of ODL higher education institutions needs to formulate a strategy to further improve their image in order to give strength to compete with other institutions of higher education so that their institution is always the first choice for prospective students who want to continue their studies.

The main theoretical contributions of this study are that the first study operationalizes and tests an intricate theoretical model that connects existing constructs from the marketing literature. Then, address the existing research gap by examining and finding empirical evidence for university image, administrative quality, attitude, and choice in the education context. After that, all constructs were integrated into an established model from the marketing literature, specifically to test attitude as a mediator in the relationship between university image and administrative quality with choice. The managerial implications of this research are that it can help the management to formulate and plan and focus on strategies to strengthen the administrative quality and image of the university to attract more potential students who want to continue their studies to a higher level to choose their study institution. The management of ODL higher education institutions needs to ensure that their administrative staff always have skills that suit the needs of prospective students. Continuous training is very important so that all administrative staff is able to provide high-quality administrative services to prospective students. Providing high administrative quality will be able to attract potential students and give them confidence about the quality of service they will receive when studying at the institution. Likewise, with the image of the university, the ODL higher education institutions need to strengthen the branding of their respective institutions to ensure that the image of the university is always in a stable state and demonstrate the strength of the university in the academic field. A good image of the university will give the impression that the ODL higher education is capable of providing the best academic quality to prospective students and this will be the main attraction for prospective students to

register.

The presented model and the empirical results of this study have practical implications for the management of ODL higher education institutions. This study reveals that university image, administrative quality, and attitude are crucial and play a role in the establishment of ODL learners' choice. These elements are very important from the perspective of ODL learners when university image and academic quality have a direct and indirect relationship with attitude as a mediator. For the management of ODL higher education institutions, the findings from this study emphasize the need to treat potential ODL learners more seriously than offering academic staff good financial value and high-quality service. The mediation analysis clearly shows from the perspective of ODL learners, that attitude is very much important when linked to the ODL learners' choice. ODL higher education institutions need to formulate strategies to build attitudes in their potential learners by focusing on enhancing the university's image and administrative quality. This can be done with the management taking correct and positive steps to strengthen the image of the ODL institutions and elevate the quality of administrative personnel.

Conclusion

In conclusion, administrative quality and the image of the university are two very important factors for ODL higher education institutions and they require serious attention if they are to become the top choice for more prospective students seeking a place to continue their studies. Besides that, a positive attitude toward prospective students will be a catalyst for prospective students to choose the ODL higher education institution of their choice. This study has statistically proven that with a positive attitude of prospective students, the influence of administrative quality and university image will be more effective on working adults' choice. In future studies, it is suggested to include variables that are deemed appropriate that have an influence on working adults' choice such as service recovery, working adults' trust, self-efficacy, and location. Additionally, future studies are also recommended to involve more ODL higher education institutions so that the selected study sample is more comprehensive and representative.

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