

Influence of Demographic Characteristics on Turnover Intentions among the Academic Staff in Public Diploma Teacher Training Colleges in Kenya

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Abstract: *The purpose of the study was to investigate the influence of demographic characteristics on turnover intentions among the academic staff in PD TTCs in Kenya. The study employed ex post facto research design to test the statistical relationships between demographic characteristics and turnover intentions in PD TTCs in Kenya. Purposive sampling was used to select 4 PD TTCs, 4 college principals and 8 senior masters. Simple random sampling was used to select 430 academic staff members for the study. Data was collected using a questionnaire and interview schedule. The data was analyzed using logistic regression. The study established that demographic characteristics were significant predictors of turnover intention.*

Keywords: Demographic Characteristics, Turnover Intentions, Influence, Academic Staff

1. Introduction

Qualified academic staff in both the developed and developing world is becoming the hardest segment of the teaching profession to attract and retain (World Bank, 2010). Thus, high turnover rate of the academic staff poses a major challenge to educational authorities as it hinders development and accomplishment of the institutional goals and objectives (Mayhew, 2016). A number of empirical studies indicate that demographic variables are relevant to understanding employee decision to stay or quit (Akpa & Asikhia, 2016; Bal *et al.*, 2011; Deumert, 2010). Similarly, Rouyn & Fuentes (2012) commented on the relationships of variables and identified that turnover intention and demographic variables are directly related. It means that every variable which is connected with turnover has some effect on the decisions of the workers' of the organizations that whether they have to stay or leave the organization. The influence of the demographic variables is varying from culture to culture and is very limited research is done at global level.

Purpose of the Study

The purpose of this study was to investigate the influence of demographic characteristics on turnover intentions among the academic staff retention in PD TTCs in Kenya.

Research Hypotheses

The following null hypotheses were tested;

- Ho₁ There is no significant difference in turnover intentions between male and female academic staff in PD TTCs in Kenya
Ho₂ There is no significant difference in turnover intentions between academic staff in PD TTCs categorized in terms

of age in Kenya

- Ho₃ There is no significant difference in turnover intentions amongst academic staff in PD TTCs categorized in terms of marital status in Kenya
Ho₄ There is no significant difference in turnover intentions amongst academic staff in PD TTCs categorized in terms of length of service in Kenya
Ho₅ There is no significant difference in turnover intentions amongst academic staff in PD TTCs in Kenya categorized in terms of their level of education qualification.

2. Research Methodology

Research Design

Ex post facto study was the most appropriate research design to use in order to answer the research questions and to test the hypotheses.

Sampling Procedure and Sample Size

To select the sample for the study; stratified; simple random and purposive sampling techniques were used. Mugenda (2011) argues that, the more the sampling techniques are used the better the results.

Yamane's sample size formula was used to determine the required number of respondents (Yamane, 1967).

$$n = N \div [1 + N(e)^2]$$

Where n = the desired sample size

N = size of the population

e = the desired confidence interval (or precision level)

Assuming the maximum variability, which is equal to 50% ($p = 0.5$) and taking 95% confidence level with $\pm 3\%$ precision (e), the calculation for required sample size will be as follows:

Sample Size calculation:

$N = 735$ and the desired confidence interval/precision level, $e = \pm 3\%$
 $n = N \div [1 + N(e)^2]$
 $n = 735 \div [1 + 735(0.03)^2]$
 $n = 442.3714$ respondents.

Using the formula and given a target population (N) of 735 respondents a sample of 442 respondents was drawn. The study used a bigger sample for the purpose of reducing the biases in the findings (Babbie, 2010). Further, using a large sample size, strong and effective data is important to support the hypotheses (Olsen, 2013). Mugenda & Mugenda (2010) observed that where time and resources allow, a researcher should take as big sample as possible. They emphasized that dangers of a small sample were its inability to reproduce the salient characteristics of the target population to an acceptable level.

Stratified random sampling method was then used to select respondents. Stratified sampling technique was chosen because it guaranteed desired representation of relevant sub-groups thus increasing the representativeness of the sample compared to the population (Orodho, 2012). The required representative sample size of 4 college principals, 8 senior masters and 430 academic staff was worked out separately by use of Yamane 1967 formula as suggested by (Odhiambo *et al.*, 2010). College principals and senior masters were purposively selected as they were to provide information for the purpose of the study (Maxwell, 2012). The academic staff were selected using simple random sampling, as it allows participants to have equal chances of being selected and helps avoid bias (Coolican, 2014). Creswell (2014) also recommended random sampling to optimize accuracy. The distribution of respondents is summarized in Table 1.

Table 1: Sample Size of the Study

Target	Sample Population (N)	Percentage (%)	Sampling Size (n)	Technique
Principals	5	4	80	Purposive
Senior Masters	25	8	32	Purposive
Academic Staff	705	430	61	Simple Random
Total	735	442	61	

Source: Ministry of Education Science & Technology, 2017.

Instruments of Data Collection

A variety of measuring instruments provides researchers with several options to choose the one that best suits characteristics and needs of the study (Ntisa, 2015). On the other hand, the instrument may not reflect what the researcher is seeking if chosen carelessly (Astrauskaite *et al.*, 2011). However, Okoth (2012) argue that, no single method of obtaining data is perfect. For this study therefore, the questionnaire and interview schedule were used in data collection for complementary purposes.

3. Results and Discussion

Logistic Regression Analysis of the Influence of the Demographic Characteristics on Turnover Intentions

Based on the turnover intent indices which ranged from 4 to 20, a dichotomous variable was created for use in the logistic regression:

$$Y_i = \begin{cases} 1, & \text{if turnover intent} > 12, \\ 0, & \text{if turnover intent} \leq 12 \end{cases}$$

Logistic regression was used to determine the probability of the academic staff leaving. The following model was used to calculate the odds ratio:

$$\ln(\text{ODDS}) = \ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_i X_i$$

Where “p” is the predicted probability of the academic staff leaving and $X_i, i=1, \dots, 5$, are the demographic characteristics considered in the study. The definition of the variables is as shown in Table 2 below.

Table 2: Logistic Regression Variables and Coding

Variable Name	Definition
Turnover	Dichotomous 0= Teacher does not have intention to Leave 1= Teacher has intention to leave
X₁ = gender	Categorical Variable 1= Male 2= Female (reference category)
X₂ = Age	Categorical Variable 1= Below 30 Years (reference category) 2= 31-50 years 3= Above 50 Years
X₃ = Marital Status	Categorical Variable 1= Single (reference category) 2= Married 3= Separated / Divorced
X₄ = Work Experience	Categorical Variable 1= Below 5 years (reference category) 2= 6-10 years 3= 11-20 years 4= Over 20 years
X₅ = Level of Education	Categorical Variable 1= Degree (reference category) 2= Masters 3= PHD

Source: Author, 2017

The analysis seeks to determine what demographic characteristics were most related to academic staff considering leaving for other jobs. Before the actual analysis, a test for the null hypothesis that the data fit the specified model was carried out. The Hosmer & Lemeshow Goodness-of-Fit test was conducted and the results are shown in Table 3. An overall goodness of fit of the model is indicated by p-values > 0.05 (Hosmer & Lemeshow, 2000).

Table 3: Hosmer and Lemeshow Test

Step	Chi-square	Df	Sig.
1	11.647	8	.168

The results of the analysis in Table 3 shows that the null hypothesis was retained ($\chi^2_{(8, 376)} = 11.647, p=0.168$). This meant that the predicted probabilities did not deviate from the probabilities in such a way that was not aligned with the prediction of the binary distribution, and the model was adequate for analysis purposes

To observe the tests of individual variables in the model, the Maximum Likelihood Estimates, and the Wald Confidence Intervals and odds ratios were presented. The results of this analysis are shown in Table 4. Included in the Analysis of Likelihood estimates are the beta coefficients (B) for each of the explanatory variables in the logistic regression equation, along with the standard error for each variable. The beta coefficients, along with the constant value, allowed for the calculation of the log odds of the academic staff possessing a particular set of variable characteristic, intending to leave the institution. However, the odds ratio estimates are the most descriptive in regards to explaining the relationship between the dependent and independent variables. The odds ratio estimates tells us the change in "odds" of being in one of the categories of the dependent variable for every unit increase of any given variable in the model. The model predicted the odds of academic staff having intentions to leave. A value of one for the odds ratio means that there is no change in odds as the variable increased. A value of less than one for the odds ratio means that for every unit increase of a given variable the odds of the academic staff intending to leave decreased. A value of more than one means that for every unit increase of a given variable the odds of the academic staff intending to leave increased. The results are shown in Table 4.

Table 4: Variables in the Equation Table Block 1

B		S.E. Wald		Df	Sig.	Exp (B)	
Step	Gender (1)	.116	.236	1.243	1	.622	1.123
1 st Age		10.017	2	.007			
Age (1)		.708	.265	7.166	1	.007	2.031
Age (2)		-.885	.316	7.865	1	.005	.417
Marital		5.821	2	.054			
Marital(1)		-.223	.274	.664	1	.415	.800
Marital (2)		-.057	.318	2.064	1	.151	.945
LS		3.801	3	.049			
LS (1)		.240	.348	.477	1	.490	1.272
LS (2)		.066	.375	.031	1	.001	1.068
LS (3)		-.252	.372	.459	1	.498	.777
LE		7.795	2	.002			
LE (1)		.190	1.275	3.612	1	.014	1.209
LE (2)		1.641	.231	11.253	1	.000	5.16
Constant		.045	.418	.012	1	.014	1.046
Constant		.045	.418	.012	1	.014	1.046

Influence of Gender on Turnover Intentions

The results displayed in Table 4, shows that the effect of gender is positive but not significant ($Wald=1.243, df=1, p>.05$), hence we fail to reject the null hypothesis (H_{01}) of no significant difference in turnover intentions between male and female academic staff in PDTTCs in Kenya. This implies that gender is not a significant predictor of turnover intentions. However, the Odds Ratio results indicate that males are 1.123 times more likely to leave compared to female academic staff. Based on the odds ratio, the probability of a male academic staff leaving PDTTCs is 52.9% ($\frac{1.123}{1+1.123}$) while that of a female academic staff leaving the PDTTCs will be 47.1%. However, the researcher concluded that despite there being higher turnover intent among male than in female academic staff, the difference is not statistically significant. This implies that gender does not influence turnover intentions amongst the academic staff in PDTTCs. It also came out very clearly from the interview data that gender has no relationship with turnover intentions among the academic staff in PDTTCs. The results presented in Table 4 concurs with Wang(2017) who found no significant difference between gender and turnover intentions ($p>0.05$) among the workers five star hotels in Beijing in China. Although the results of Wang(2017) study showed a remarkable leading factor in assessing the contribution of gender on turnover intentions, the responses collected from the field was a small sample of 80 compared to the responses of 376 in the current study. Fewer responses in Wang (2017) study might not accurately reflect the real situation of employees working in five star hotels in Beijing. In addition, Waga(2017) used snowball sampling which could have contributed to the sample bias that was identified in his study. All these could pose a limitation in terms of generalizability to other populations. Therefore, results could only be applicable to the five star hotels in Beijing, China and could not fit well with other organizations especially in the

Influence of Age on Turnover Intentions

The findings presented in Table 4 portray that the effect of age on turnover intentions is a highly significant, overall effect ($Wald=10.017, df=2, p<.05$). The regression coefficients for all age brackets are significant and negative, indicating that increasing age is associated with decreased odds of leaving. Based on the results, we reject the null hypothesis (H_{02}) 'that there is no significant difference in turnover intentions between academic staff in PDTTCs categorized in terms of age in Kenya. This implies that age is a significant predictor of turnover intentions. The Exp(B) column (the Odds Ratio) indicates that academic staff in the age bracket 31-50 years are twice (2.031) more likely to leave than those who are below 30 year (the reference category) hence the probability of an individual aged between 31 and 50 years in PDTTCs leaving compared to those below 30 years is 67% ($\frac{2.031}{1+2.031}$). Comparatively those over 50 years are 0.417 times (or 29.4% ($\frac{0.471}{1+0.471}$)) likely to leave compared to those who are below 30 years. The results imply that turnover intentions decrease with advancement in age. The results illustrated in Table 4 tallies with the interview data, indicated that the older

generation among the academic staff had a lower turnover intention. This was attributed to the fact that they do not have similar thoughts and expectations compared to younger staff. This probably implies that young academic staff have higher quit rates due to shifting career paths, fewer family responsibilities and financial obligations. On the other hand, older academic staff are less likely to resign than younger ones because their long tenure tends to provide them with higher salary rates and more attractive retirement benefits. Thus, older academic staff members are more satisfied with their jobs, and hence have lower desire to move. These results have significant implications to educational planners and managers. They should focus on retentional strategies targeting young academic staff in the profession. This will reduce academic staff turnovers in PDTTCs and hence effective accomplishment of the institutional goals and objectives. Further, the findings presented in Table 4 agrees Akpa&Asikhia (2016) who found that age had statistically significant negative relationships with turnover intentions among employees in selected private universities in Nigeria. From their findings, it was revealed that younger employees (40 years and below) had greater intention to leave their jobs in universities than older employees. Although, Akpa&Asikhia (2016) provided support for the current study on age and turnover intentions, the findings were limited to private Universities in South-West Nigeria. This made it impossible for generalizability of findings to other populations especially in public sector.

Influence of Marital Status on Turnover Intentions

The results illustrated in Table 4 suggests that the effect of marital status is positive even though not significant ($Wald=5.821$, $df=2$, $p>.05$), hence we accept the null hypothesis (H_{03}) 'that there is no significant difference in turnover intentions amongst academic staff in PDTTCs categorized in terms of marital status in Kenya'. This suggests that marital status was not a significant predictor of turnover intentions. The Odd Ratios indicated that both the married and separated/divorced categories had lower turnover intentions compared to those who were single with odds ratios of 0.800 and 0.633 respectively, which were all less than one. This also imply that the probability of married academic staff leaving compared to the singles was 44.4% while the one for those separated/divorced leaving was 38.8%. Consequently, the singles had chances of leaving. This implies that the academic staff turnover intention does not differ significantly with marital status. Similarly, findings from interview schedule with college principals indicated that marital status on its own does not influence the turnover intentions. They further, noted that both married and single academic staff members were equally likely to turnover. This findings presented in Table 4 are in line with Parasız *et al.*, (2017) who observed that marital status have no effect on intention to leave among the academic staff working in the school of physical education and sports of state universities in Turkey. Despite the similarities, the researcher was skeptical to interpret these findings to mean that marital status has no effect on turnover intentions. This was because the researcher considered that One-Way ANOVA results were not sufficient to allow generalizations. More

specifically, One-Way ANOVA cannot reveal differences among the groups within the samples (Kothari, 2010). It was because of this limitation, that the researcher opted to pursue the effects of marital status on turnover intentions using logistic regression, hence forming the point of departure between the current study and Parasız *et al.*, (2017).

Influence of Length of Service on Turnover Intentions

The findings presented in Table 4 indicates that the influence of length of service on turnover intentions, there is a significant overall effect ($Wald=3.801$, $df=3$, $p<.05$), hence the researcher rejected the null hypothesis (H_{04}) that 'there is no significant difference in turnover intentions amongst academic staff in PDTTCs categorized in terms of length of service in Kenya'. This implies that length of service is a significant predictor of turnover intentions. The regression coefficients for the length of service of 6-10 years is significant indicating that the academic staff who had fewer years in service had higher turnover intentions hence increasing age is associated with decreased odds of leaving. The Exp (B) column (the Odds Ratio) reveals that the academic staff who had been in service for period between 6 and 10 years were 1.272 more likely to leave than those who were in service for less than 5 years (the reference category) hence the probability of an individual whose length of service was between 6 and 10 years in PDTTCs leaving compared to those below 5 years is 56% ($\frac{2.272}{1+2.272}$). Comparatively those who had been in service for between 11 and 20 years were 1.068 times (or were 51.6% ($\frac{1.068}{1+1.068}$)) likely to leave compared to those who were less 5 years. Also, those who were over 20 years in the service were 0.777 times (or were 43.7% ($\frac{0.777}{1+0.777}$)) likely to leave compared to those who were less 5 years. The results imply that turnover intentions declined with length of service. This suggests that the number of years an academic staff has worked is an important predictor of turnover intention. Younger, less experienced academic staff may be more mobile, probably could be due to the greater job opportunities open to them. Further, the findings in Table 4 are in consonance with Ayalewet *al.*, (2015) who found out that length of service is a significant predictor of turnover intentions among nurses in public health facilities in Ethiopia. Thus, nurses were more likely to intend to leave their jobs if they had fewer years of experience. Despite similar results, the shortcomings from Ayalewet *al.*, (2015) study was that, nurses were not asked whether they intended to leave the profession, move to another organization or facility, or leave the country. This posed a limitation in terms of generalizability. Consequently; the study opted to pursue this relationship in PDTTCs in Kenya.

Influence of Level of Education on Turnover Intentions

The findings in Table 4 shows that the effect of level of education is positive and significant ($Wald=7.795$, $df=2$, $p>.05$), hence we reject the null hypothesis (H_{05}) 'that there is no significant difference in turnover intentions amongst academic staff in PDTTCs in Kenya categorized in terms of their level of education qualification'. The Odd Ratios

indicated that both the academic staff with masters and PhD qualifications had higher turnover intentions compared to those who had the basic degree with odd ratios of 1.209 and 5.160 respectively, which were all above one. This implies that the probability of an academic staff with a masters degree leaving compared to those with a basic degree was 54.7% while the one for those with PhD leaving was 83.8%. This implies that educational qualification was a significant predictor of turnover intentions among the academic staff in PDTTCs. The findings from the interview data also confirmed that highly educated academic staff members were more likely to quit. From the interview schedule, it was reported that, highly educated academic staff desires and needs were more difficult to fulfill than those of with lower educated academic staff, which subsequently led to high intentions to quit. Interestingly, the study findings in Table 4 are inconsistent with other studies of similar nature. For instance, Ajayi & Olatunji (2017) reported that there was no significant difference in teachers' turnover intention and their academic qualifications amongst Nigerian high school teachers. This probably suggests that academic staff have equal tendency to leave or remain on their jobs irrespective of their qualifications. Apparently, it can be explained that some academic staff use their appointments as stepping stones to other careers, where working conditions are perceived to be better than in PDTTCs.

4. Summary

The purpose of the study was set out to establish the influence of demographic characteristics on turnover intentions among the academic staff in PDTTCs in Kenya. It was found out that 3 out of the 5 demographic characteristics namely; age, length of service and level of education were significant to the prediction of turnover intentions amongst academic staff in PDTTCs. This is because they had *p*-values values of less than 0.05.

5. Conclusion

Based on the findings of the study, the researcher concluded that demographic characteristics have a significant influence on turnover intentions among the academic staff in PDTTCs in Kenya.

6. Recommendations

- 1) TSC, to consider rewarding the academic staff for capability and performance rather than the old tradition of 'experience'.
- 2) TSC if possible to develop a scheme of service for Masters and PhDs to reduce the desire of the academic staff in the PDTTCs to switch to universities or other competitive organizations in human resource production.

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