The Moderating Role of Type of University in the Relationship between Transformational Leadership and Supply Chain Management:
Evidence from Universities in the Kurdistan Region of Iraq

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***Abstract*- This paper aims to explore the extent to which the type of university affects the link between transformational leadership and supply chain management (SCM), in the Kurdistan Region of Iraq. This paper uses quantitative methods to study the link between the main variables. The data were gathered from 611 lecturers in 14 public and 11 private universities in the Kurdistan Region. SmartPLS3 was used to evaluate measurement model and structural model. The results show a significant correlation between transformational leadership and readiness for change. Smart PLS results show that type of university were found to not have an effect on the correlation between these two variables. This paper contributes to existing literature by presenting a more complete understanding for practitioners and researchers of the potential effect of transformational leadership during organisational change by investigating its effect on the readiness for change by the moderating role of type of university.**

***Keywords*-** *Transformational leadership, supply chain management, readiness for change, higher education, public and private universities, Kurdistan Region of Iraq.*

1. Introduction

In today's environment, organisational change has become a common survival tool for all organisations regardless of size or industry. As do other sectors, the higher education sector faces many fresh challenges in the new millennium. In today's changing environment, higher education institutions are required to adapt to change. In line of with this, the Ministry of Higher Education and Scientific Research in Kurdistan has decided to reform the higher education system of the region. In general, implementing organisational change is difficult with a low actual success rate of less than 30% [1].

For the purpose of identifying and understanding postures of SCM accounting practices a distinction between SCM management accounting techniques and SCM management accounting practices is made. In this line, the reformation of the higher education system in Kurdistan has faced many barriers in achieving the desired outcomes from implementing the reforming process successfully. Resistance to change is a major barrier and a big challenge requiring that administrators use different methods to overcome the problem, which can lead to a slowdown in accomplishing the reform process. Included among those resisting change are lecturers [2]. However, acceptance and support from employees are crucial for succeeding with an organisational change.

Past empirical studies have confirmed that the attitudes, behaviours and reactions of employees to change play major roles in its success. These attitudes and reactions could be two types; positive (change readiness) or negative (change resistance). According to Gilley, Dixon, and Gilley, acceptance/readiness of upcoming change is avital pre-requisite to improve the chances of success of organisational change. Furthermore, most previous studies on organisational change relate more to change resistance than change readiness [3]. Nonetheless, the readiness of employees for change is essential for seamless and long-term implementation of change.

Organisational change requires leaders to change, and leadership is the corefactor to guide any process of change in organisations [4]. Achieving success in organisational changes requires a proper leadership style to garner positive reactions from employees

during the process of change. With respect to leadership style, transformational leaders are understood to play an extraordinarily vital role in the successful implementation of change [5]. In this regard, [6] determined that implementing organisational change is one of the most sought-after competencies for leaders, but is least understood. Many organisational factors such as readiness for change and proper leadership style should be considered for a reform to be successful. In light of that, transformational leadership has previously understood as an essential factor in promoting readiness for change.

Based on the previous studies, public institutions are bureaucratic institutions and contain complex political systems. Therefore, appropriate leadership style and readiness for change might be different in public and private institutions. Accordingly, this study explores the role of the type of a university as moderator in the link between these two factorsin the Kurdistan Region of Iraq universities.

2. Literature Review

2.1 Readiness for Change

Lean SCM is a team-based approach to continuous improvement focused on eliminating non-value added activities from the viewpoint of the customer by motivating others in the organization to make changes that optimize current performance. Lewin (1947) generated the first acknowledged model that conceptualized the process of change. His model contained three steps: unfreezing, moving, and refreezing. The first step, unfreezing, is the process of helping employees to mentally prepare for a change by convincing employees of the need for change and its potential benefits and explaining the future vision of the organisation. In addition, unfreezing (the first stage) is similar to the idea of readiness for change. When employees in an organisation feel that they are qualified (ready) to make a change, they are more likely to take the risks involved in moving toward adopting new attitudes and behaviours, and ultimately new attitudes and behaviours are refrozen into organisation. When problems occur in this stage (unfreezing or readiness for change), then problems will occur in the next steps and ultimately successful change cannot occur over the long term.

Based on Model, [7],[8] developed a new model to explain the organisational change process and to better understand how to implement change effectively, namely, readiness for change. It has been extensively studied in literature on organisational change and is the most frequent positive attitude associated with change. Therefore, it is a significant factor and plays avital role in the successful implementation of change initiatives [9],[10], [3] suggests over 90% of the research on attitudes towards organisational change has been carried out on either change readiness or change resistance. Using the term readiness instead of resistance is more consistent with the change agent role when undertaking change [11]. However, many factors affect readiness for change such as leadership style, specifically, transformational leadership style.

2.2 Transformational Leadership

Leadership has been identified as an important subject, and one of the most frequently discussed and reviewed topics in the organisational behaviour field due to its importance to all organisations. The leadership concept, definition and style may vary from one researcher or from one situation to another. In the mid-to-late 1970s, a new leadership pattern began to capture the attention of many. Putting together three leadership approaches, (i.e. behaviour, contingency, trait) the theory of transformational leadership was developed. Transformational leadership style is distinctive from other leadership styles because this style extends beyond traits, characteristics, and behaviours. Transformational leadership is about charisma, inspiration, intellect, and individualized consideration.

This study focuses on transformational leadership due to heightened relevance in the sphere of organisational change, and the perception of leaders of the transformational type as change agents in the organisation [12].

Burns introduced the notion of transformational leadership in 1978 in a best-selling book entitled Leadership. Since the inception of the idea, the concept has received a great attention and has been

among the most noticeable topics in the research and theories concerning leadership. Indeed, the transformational leadership style has attracted more research attention than all other main leadership styles collectively. Furthermore, it is now among the most widely chosen the approach for researchers in the field [12].

Thus, the transformational leadership style is a central leadership theory and a popular topic today. Hundreds of studies have been done since the 1980s, which have demonstrated that the transformational leadership style affects organisational attitudes and outcomes. Moreover, the plethora of studies on transformational leadership style have extended [13] original focus on the political field to numerous private, public and non-profit organisations [14]. According to [15], a transformational leader achieves excellent outcomes by using the following behaviours: idealized influence behaviour (charismatic) behaviour, inspirational motivation behaviour, individualized consideration behaviour, and intellectual stimulation behaviour.

2.3 Transformational Leadership and Readiness for Change

During organisational change, all leaders, but especially transformational leaders, play a key role in their organisations [12]. Transformational leaders influence the behaviours of their followers; hence, employees are more likely to accept and be ready for change than to be resistant to change. Moreover, the attributes of leaders are significant in the process of building readiness for change [8]. In this regard, many studies have found that transformational leadership behaviour plays an important role in increasing the level of employee readiness for change. From the previous studies and the above discussion, this study hypothesises that:

H1: Transformational leadership has a positive relationship with readiness for change.

2.4 Higher Education in the Kurdistan Region

From the founding of Iraq in 1921 until the late of 1960s, no universities existed in the Kurdistan Region, including Kirkuk. In 1968 the University of Sulaimaniah was founded. Later, in 1981, the University of Sulaimaniah transferred to Erbil and named Salahaddin University. After the Gulf War I (1991), the United Nations (UN) announced a no-fly zone, and three Iraqi northern Kurdish provinces (Erbil, Sulaymaniah, and Duhok) gained autonomous status. The Iraqi regime completely withdrew its troops from the three provinces. Consequently, the University of Salahaddin acquired the independence from the MHESRof Baghdad that it had sought since its establishment in 1968. Until the liberation of the Region from the Baath regime, Salahaddin University remained small and isolated.

After liberation, the Kurdistan Regional Government (KRG) reopened the University of Sulaimaniah and inaugurated the University of Duhok in 1992. Since 1992, many other new universities and technical institutes have been established in major cities and towns. The Kurdistan Regional Government has also invested in research and several research centres have been established. Today, there are 11 public universities, 3 polytechnic universities, and 11 licensed private universities in the Kurdistan Region. They offer courses leading to certificate, graduate and postgraduate degree qualifications.

Major changes have happened in the world in recent years, and because the higher education system is not separate from the society, the system has faced many changes. Additionally, the rapid growth in the higher education global market implies many things have changed. In line with this, the Higher Education and Scientific Research Ministry in Kurdistan has decided to reform the higher education system in the Kurdistan Region. The reform process began with a new vision, followed by a well-defined strategy and a well-designed roadmap for the higher education system reformation. According to former Minister of Higher Education and Scientific Research in Kurdistan Region, [16], the strategy of reformation is the foundation of a long development process that would not be comprehensive without the support of all individuals involved in higher education institutions including academic staff, students, and other employees. The conclusion that can be drawn

from his view is that the support and acceptance of this new strategy by these individuals is significant in the successful implementation of the reform process in higher education institutions in Kurdistan. In same line, many authors [17], [18], have stated that acceptance and support from employees is important for the success of an organisational change. In light of this, readiness for change in an organisation has become a best predictor of any change success. Many change efforts have failed due to numerous factors such as lack of readiness for change and an improper leadership style. In other words, leadership style and readiness for change are important during organisational change. Moreover, based on the previous studies, public institutions are bureaucratic institutions and contain complex political systems. Therefore, the level of leadership style and readiness for change might be different within public and private institutions. Hence, this paper hypothesises that:

h2: the type of university (public/private) moderates the relationship between transformational leadership and readiness for change.

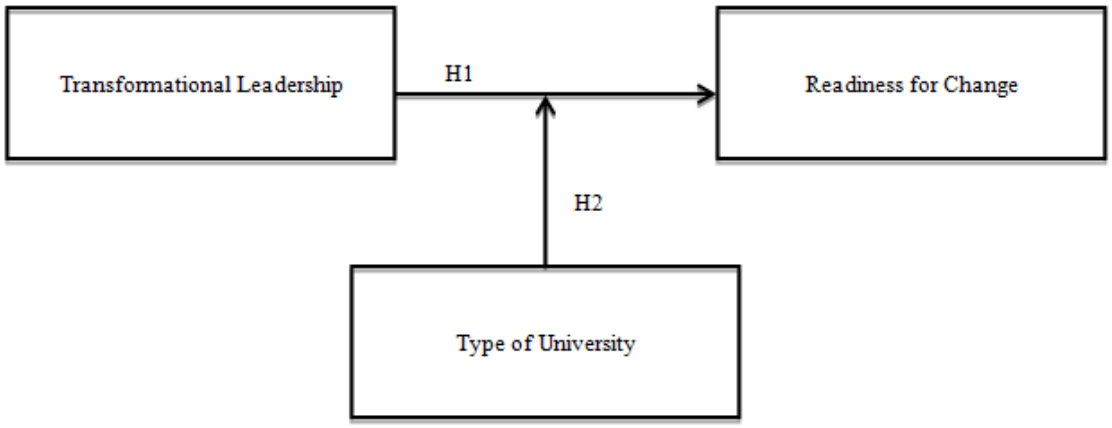

Figure1. Paper Framework

3. Research Methodology

The present study conducted a quantitative survey among public and private higher education institution in the Kurdistan Region. A questionnaire was developed to measure transformational leadership, readiness for change, and respondent profiles. In this study, 20 items drawn from the Multiple Leadership Questionnaire (MLQ) of [19] were adapted to measure transformational leadership. To measure readiness for change, 9 items were adapted from Bouckenooghe, [20]. The first section represented the profile of respondents, and this section contains 6 questions regarding the gender, age group, academic qualification, academic position, type of university, length of the service in the university. Sections 2 and 3 covered the questions about the two main variables in the study.

To gather data from the respondents, 1200 questionnaires were distributed by email. The survey was conducted from the end of April 2017 to the end of June 2017 among university lecturers. Among the completed and returned questionnaires, 611 questionnaires were suitable for analysing, providing a response rate of about 51%. Two statistic tools were used to analyse data, which were SPSS and Smart PLS. SPSS version 22 was used for descriptive analysis, and Partial Least Square-Structural Equation Modelling (PLS-SEM) was used to assess the measurement model and structural model. PLS-SEM was used because the data were not normally distributed, and the model included a combination of both reflective and reflective-

formative constructs. [21] Suggest using PLS-SEM when a model contains both reflective and formative constructs.

4. Data Analysis and Findings

4.1 Descriptive Analysis

Among 1200 distributed questionnaire, total of 611 respondents from public and private universities in the Kurdistan Region were completed and suitable for further analysis. Of the 611 lecturers who participated, 349 representing 57.1% of the total responses were from public universities and 262 of them representing 42.9% of the total responses were from private universities. Most respondents in this study were male (72%), and around 60% of the respondents were less than 40 years old. In addition, 220 respondents of the 611 respondents held a PhD, and around 50% of all respondents were assistant lecturers, and 72% of the respondents had more 5 years of the service in the university.

4.2 Model Assessment

Measurement model assessment and structural model assessment are two steps in model assessment via PLS. Measurement model assessment involves a test of the validity and reliability of the main constructs. Whereas structural model assessment focuses on the relationships between the main constructs.

4.2.1 Measurement Model Assessment

The present study comprises six reflective first-order constructs and a reflective-formative second-order construct. Because all first-order constructs are reflective, the measures to evaluate the reflective measurement model needed consideration in order to evaluate measurement model (first step). This involves determining the internal consistency, convergent reliability, and discriminant validity. In the second step, the measurement model was analysed by producing a second-order construct.

Reliability or internal consistency is usually the first measure to be assessed. Cronbach's alpha is the go-to criterion used to assess internal consistency, as this helps reveal an estimate of the reliability based on the inter correlations of the observed indicator variables. The Cronbach's alpha coefficient ranges between 0 to 1. A higher coefficient of Cronbach's alpha produces a better measurement [22]. A value of 0.70 or more is used as baseline for this study [14]. Table 2 shows each construct's score and the overall scores of Cronbach's alpha fulfilled the requirement of being 0.70 or greater. Moreover, composite reliability is another measure that can be used in this scenario. This score varies between 0 and 1, the close it is to 1, the highest the levels of reliability. The overall score of composite reliability also fulfilled the requirement of being 0.70 or more (as shown in Table 1).

Moreover, the concept of convergent validity shows the measure to which a measure displays positive correlation with alternative measures of the same construct. In order to evaluate this, researchers look towards the outer loading of the indicators as well as average variance extracted (AVE).The higher these are, it indicates that the associated indicators share many characteristics, which is captured by the construct. Table 1 shows PLS analysis results; all outer loadings of the reflective constructs are above the threshold value of 0.60, suggesting acceptable levels of indicator reliability.

Furthermore, Average Variance Extracted (AVE) is another measure that informs of convergent validity right at the level of the construct. It is defined as the grand mean value of the loadings (squared) of the construct-associated indicators. An AVE value of 0.50 or higher shows the fact that the construct clarifies over 50%of the variance of its indicators. Table 1 shows that AVE values were above 0.50 (threshold value); therefore, all six reflective

constructs have high levels of convergent validity. Discriminant validity is the degree to which a construct is unique from other constructs by empirical standards. This implies that this construct is unique and captures factsun-represented by other constructs in the model. Cross-loadings, the Fornell-Larcker criterion, and the Heterotrait-Monotrait ratio (HTMT) are three approaches to measure discriminant validity. This is widely used as the first method to assess the DV of indicators. Moreover, the outer loading of any must be higher than any cross-loadings on the constructs. Smart PLS results display that the loadings exceed the cross-loadings.

The Fornell-Larcker criterion is the another method that assesses the discriminant validity. It analyses the root-squared of the AVE values with latent variable correlations. The square of root of each construct's AVE must be higher than the value of its highest correlation with other constructs. The results show that the square roots of the AVEs are all higher than the correlations of the constructs with other latent variables in the path model.

The Heterotrait-monotrait ratio (HTMT) is the final approach to measure discriminant validity. HTMT is the ratio of the between-trait correlations to the within-trait correlations. HTMT is the average of all of indicators across constructs measuring different constructs relative to the mean of the average correlations of indicators measuring the same construct. The results show that all values were less than 0.95.

Thus, these three approaches provide evidence for the discriminant validity of all six constructs.

In the next step of measurement model, the measurement model for second-order construct was analysed. Transformational Leadership (TL) as a second-order construct in this study can be represented by the five first-order components (Idealized Influence-Attribution-IIA, Idealized Influence-Behaviour-IIB, Inspirational Motivation-IM, Intellectual Stimulation-IS, and Individualized Consideration-IC).These first-order constructs represent lower-order components (LOCs) of the more general higher-order component (HOC) Transformational Leadership-TL. In this study, TL as a second-order construct considers the reflective-formative HCM form and implies (formative) relationships between the LOCs and the HOC, and all first-order constructs are measured by reflective indicators.

To evaluate the HOC's measurement model, all the indicators (20 items) from the LOCs to the HOC were assigned in the form of a repeated indicators approach. In the first step, the repeated indicator approach was used to gainthe latent variable scores for the LOCs. In the second step, the LOC scores serve as manifest variables in the HOC measurement model. The LOC scores are readily available from the Smart PLS output. In reflective-formative HCM type, collinearity and significance and relevance of the relations must be assessed between the LOCs and the HOC. To check collinearity for issues, the Quality Criteria-Collinearity Statistics (VIF) were drawn from the Smart PLS. The VIF values of Idealized Influence-Attribution-IIA (2.792), Idealized Influence-Behaviour-IIB (3.363), Inspirational Motivation-IM (2.513), Intellectual Stimulation-IS (3.585), and Individualized Consideration-IC (3.026) were less than the threshold of 5, providing support that collinearity was not a serious issue. The results presented in Table 1 show that the measurement model for the six reflective constructs met satisfactoriness criteria. The VIF values for the indicators of second-order construct were below 5 (threshold) and acceptable, and the p-value of the outer weights was below 0.05 and significant. Therefore, the measurement model assessment criteria have been met and provided provision for the validity and reliability of the measures.

Table 1. Measurement Model Assessment

Latent Variable	Items	Convergent validity		Internal consistency reliability		Discriminant Validity
First-order		**Loadings/ Weights**	**AVE/ VIF**	**Cronbach's Alpha**	**Composite reliability**	**HTMT Confidence interval does not include 1**
Idealized Influence-Attribution- IIA	IIA1	0.775	0.654	0.823	0.883	Yes
	IIA2	0.846				
	IIA3	0.853				
	IIA4	0.756				
Idealized Influence-Behaviour- IIB	IIB1	0.698	0.628	0.803	0.871	Yes
	IIB2	0.824				
	IIB3	0.818				
	IIB4	0.824				
Inspirational Motivation-IM	IM1	0.831	0.700	0.858	0.903	Yes
	IM2	0.840				
	IM3	0.833				
	IM4	0.844				
Intellectual Stimulation-IS	IS1	0.784	0.709	0.863	0.907	Yes
	IS2	0.848				
	IS3	0.856				
	IS4	0.879				
Individualized Consideration-IC	IC1	0.831	0.670	0.834	0.890	Yes
	IC2	0.724				
	IC3	0.869				
	IC4	0.842				
Readiness for Change-R4C	R4C1	0.748	0.554	0.902	0.918	Yes
	R4C2	0.753				
	R4C3	0.773				
	R4C4	0.709				
	R4C5	0.663				
	R4C6	0.696				
	R4C7	0.764				
	R4C8	0.794				
	R4C9	0.790				
Second-order	**Items**	**Weights**	**VIF**			
Transformational Leadership-TL	IIA	0.776	2.792			
	IIB	0.289	3.363			
	IM	0.274	2.513			
	IS	0.386	3.585			
	IC	0.100	3.026			

from Smart PLS. The Smart PLS results report

4.2.2 Structural Model

The aim of revealing the structural model is to find the relationships among all the constructs in the study model. First, the structural model must be checked for collinearity matters by evaluating the VIF values of all groups of predictor constructs. The inner VIF values of Quality Criteria-Collinearity Statistic (VIF) are drawn shows that all VIF values were notice ably less the than threshold of 5. Hence, collinearity between the predictor variables was not a serious matter in the structural model, and the results report can be continued to be examined.

The most frequently used gauge to assess the

structural model is the coefficient of determination (R^2 value). It shows the independent variables' combined impacts on the dependent variable. It value locates between 0 and 1, with greater values representing greater values of predictive correctness. The R^2 value of Readiness for Change-R4C was 0.203. This means that 20.3% of the variance found in the Readiness for Change-R4C is explained by Transformational Leadership-TL.

Figure 1 shows the relationships between TL and R4C. Looking at the relative importance of the exogenous driver construct for the Readiness for Change-R4C, the results show that the relationship between TL and R4C was (0.450). To assess whether this relationship is significant, the bootstrapping procedure was run. The hypotheses for this study are concerned with the relationships between independent variable (Transformational Leadership-TL), the moderator variable (Type of University), and the dependent variable (Readiness for Change-R4C).

This study tested the direct effect between study variables and the moderation effect. Direct effect is the associations linking two variables with a single arrow (→). The results of direct effect between main constructs in the structural model are shown in the Figure 1. H1 covers the link between TL and R4C. The standardized coefficient for the path was 0.450 (p-value = 0.000). These results indicate a significance and positive impact of Transformational Leadership-TL on Readiness for Change-R4C. In view of that, H1 was supported.

4.3 The Moderation Effect

The study hypothesizes that the effect of Transformational Leadership-TL on Readiness for Change-R4C was different for public universities compared with private universities. The type of university would then serve as a grouping variable that divides the data into two subsamples. In this regard, multi group analysis enables a researcher to test for different group of respondents (e.g., public universities vs. private universities).

Figure 1 shows the direct relationships between TL and R4C. In general, path coefficients in public universities and private universities are numerically different as shown in Table 2. For example, the results show that that the effect of Transformational Leadership-TL on Readiness for Change-R4C was a little stronger in Private Universities (0.506) than in public universities (0.461). Next, the result is checked to see if these differences are statistically significant by using multi group analysis.

Table2. Moderation Effect

Hypothesis	Public Universities (N=349)		Private Universities (N=262)		Public Universities Vs. Private Universities		
	Path Coefficient	P. Value	Path Coefficient	P. Value	**Path coefficients (Pub Uni-PriUni)**	**p-Value (Pub Uni vs Pri Uni)**	Significance Level
TL→ R4C	0.461	0.00	0.506	0.000	0.045	0.736	Not Significant

The PLS-MGA approach was used to compare public universities with private universities. The PLS-GMA approach builds on bootstrapping results, which proposed. The moderating effect of the type of university (public vs. private) is presented in Table 2, which shows that hypothesis H2 was not supported. Hence, the

conclusion was drawn that the type of university (public vs. private) did not positively moderate the link between Transformational Leadership-TL and Readiness for Change-R4C.

5. Discussion and Implications

The lack of readiness for change is reflected a main reason for the failure organisational change. Hence, preparing employees during organisational change becomes one of the main priorities in the field of human resources management. Furthermore, understanding the issues that affect employees' readiness for change is therefore a significant task for organisational researchers. In this regard, this study tested the link between transformational leadership and readiness for change in HEIs in the Kurdistan Region of Iraq. Most prior research on leadership and organisational change has focused on cases in developed and Western countries and in private organisations. Very little research on leadership and organisational change have been focused on developing countries such as Iraq-Kurdistan, and particularly none has been studied in public universities. Hence, it is interesting to know the different research results on leadership style due to the enormous differences in the management practices and the market environment between Kurdistan and Western countries.

The findings of this study exposed a strong positive relationship between transformational leadership and readiness for change. This result is consistent with past studies. Based on the above-discussed finding, H1 was supported. In addition, this was the first time that the effect of type of university, as a moderator, has been examined on the link between transformational leadership and readiness for change. The findings of this study showed that the relationship between the main variables was not statistically different in public universities and private universities. This may because the ultimate decision maker concerning change in both types of universities in the Kurdistan region is the same, which is the Ministry of Higher Education and Scientific Research. This means that type of university does not moderate the correlation between these two variables in higher education institution in the Kurdistan Region. Thus, H2 was not supported.

The most significant implication of the present study is that understanding the linkage between transformational leadership and readiness for change helps to provide healthy managerial practices to enhance the readiness for change of employees, which, in turn enhances, the likelihood of the success of the reform process in universities in Kurdistan Region. The findings of the current study will be valuable for the leaders of Higher Education Institutions facing challenges when managing the change process and designing tactics for change management in Higher Education Institutions. This study may also help practitioners to rethink and to reposition themselves in light of the study findings. The results of this study will provide evidence that readiness for change by the management of universities is required to achieve the desired outcomes from the process of Higher Education System reform. Moreover, Higher Education Institutions should invest in transformational leadership training before initiating the implementation of new strategies and emphasize readiness for change as a key driver for successful organisational change initiatives.

6. Conclusion and Recommendations

This study studied the link between transformational leadership and readiness for change and type of university as moderator among lecturers in Higher-Ed Institutions in the Kurdistan Region of Iraq. In all, 611 lecturers in 14 public universities and 11 private universities participated in this study. SPSS and Smart PLS were used to assess the descriptive analysis and the study model. The findings of this study showed that transformational leadership positively affects readiness for change. The

results showed also that the type of university (public or private) does not moderate the link between transformational leadership and readiness for change probably because the ultimate decision makers for both types of universities are the same.

Notwithstanding the theoretical and practical contributions of this study is not without its limitations. A cross-sectional design, limited sample, and the use of self-reported questionnaire data are limitations. Because readiness for change is an excellent success-predictor of change projects in all organisations, researchers should continue to examine further factors that affecting it and under different contexts.

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