

The Influence of Transformational Leadership on Knowledge Sharing in Iraq's Public and Private Higher Education: A Comparison Study

Sawsan J. Al-Husseini

Abstract—Transformational leadership (TL) has been found to have an important influence on knowledge and knowledge management (KM). It can contribute to organizational learning, employees' creativity, encourage followers to participate in educational programs and develop the skills needed to achieve exceptional performance. This research sought to examine the impact of TL on knowledge donating and collecting and the differences between these impacts in public and private higher education institutes (HEIs) in Iraq. A mixed method approach was taken and 580 valid responses were collected to test the causal relationships between the factors, then 12 interviews were conducted with the leaders of HEIs to give more insight of the findings from quantitative stage. Employing structural equation modelling with AMOS v.24, the research found that TL would be ideal in an educational context, promoting knowledge sharing activities in both sectors. The interviews revealed differences between public and private HEIs in terms of the effects relationships. Guidelines are developed for academics as well as leaders and provided evidence to support the use of TL to encourage knowledge sharing activities within higher education in developing countries particularly Iraq.

Keywords—Transformational leadership, knowledge sharing, higher education, multi-groups.

I. INTRODUCTION

TODAY the education sector is facing an increasingly challenging period. Global recession, increased competition, globalization, technological advances and demand for increasing educational quality, are all leading to a need for education across the world to become increasingly competitive, efficient and innovative [1]. Academic institutions play an important role in promoting and sustaining economic booms through their research, and creation of a skilled graduate workforce [2].

As the world moves toward competition and innovation, TL has been identified as the most important factor affecting innovation. This style leads to increased goal-directed behaviour exhibited by followers, and thus to enhanced performance and innovation for the organization [3].

Knowledge and knowledge sharing (KS) are recognized as important weapons in producing a competitive advantage, and the key to enhancing innovation. KS is considered to be a building block of efficient performance within higher education environments and to play a key role in enhancing

the innovation of universities [1].

Higher education in developing countries like Iraq, as in many countries, is facing major challenges that require certain types of leadership styles [4]. Educational markets are becoming increasingly global nowadays, and the ability of the education system in Iraq to reach a global market will depend on changes in the systems, methods, curricula, and leadership style. Iraqi public and private HEIs require unique rather than traditional leaders, as the latter cannot help them to compete in the present educational environment.

Lin [5] noted that understanding KS enablers is highly necessary in organizations. Previous studies have linked TL with KM [6]. Only a few studies have investigated the impact of TL on KS processes of teaching staff and the differences in these impacts between public and private HEIs in developing countries, particularly Iraq. The outcomes of this research will be useful for leaders and decision-makers of both sectors to develop management strategies for innovation by encouraging KS activities that will work best for each sector.

II. THEORETICAL BACKGROUND AND HYPOTHESES

A. TL and KS

TL began with Burns [7] when he tried to find relationships between leadership and followership amongst political leaders. This work was expanded by Bass [8] who considered the first scholar to apply TL theory in business organizations. This style involves attempts to make changes that increase organizational effectiveness and the performance of the followers, by transforming the latter's personal values and self-concepts [3].

According to Bass and Riggio [9], there are four behaviors that form the basis of TL: "Idealized influence" involves setting an example for followers to follow. Such a leader can show a sense of purpose, and demonstrate high standards of ethical and moral conduct. Under "inspirational motivation", leaders try to encourage individual and team spirit and collaboration among organizational members, identify new opportunities, and encourage followers to envision attractive future states. By practicing "Intellectual stimulation", leaders have the ability to encourage followers to be creative and innovative and to challenge their own beliefs and values. With "individualized consideration", leaders build interactive relationships with followers and pay special attention to their needs.

Hislop [10] considered knowledge to be a broad concept

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which includes experiences, values, experts, information, and ideas that help people and the organization to develop. Two types of knowledge are most commonly used in the literature; explicit and tacit knowledge. Explicit knowledge denotes knowledge that is articulated, objective, externalized and captured, and has a more tangible format. While tacit knowledge, describes the personal, the subjective, and the intangible [11]. It is crucial to getting things done and is the key to organizational tasks, such as creating new knowledge, generating new products, and improving procedures that lead to innovation.

Yang [12] described KM as a process of creating, disseminating, and applying organizational knowledge such as to exploit new opportunities and enhance the performance of the organization. KS among organizational members is one of the most important issues for KM success [10]. Sohail and Daud [13] found that the outcome of KS is the generation of new knowledge and therefore the enhancement of organizational innovation. Through KS, organizations can develop their skills, and competence, and increase their value [14].

KS is the process by which knowledge is exchanged and created at the same time through two processes, donating and collecting. The donating of knowledge refers to the exchange process and communicating to others what one's personal intellectual capital is. It refers to the capacity of individuals to share what they know and to use what they learn [5]. Knowledge collecting, on the other hand, refers to the recipient of knowledge who must consult colleagues through observation, listening or practicing so as to encourage them to share their intellectual capital [15]. It represents the acquisition of information and knowledge from internal and external sources. Fullwood et al. [16] indicated that organizations will become more effective through creating, sharing, and reusing knowledge. TL can create a collaborative team environment, and encourage communication, negotiation and the sharing of knowledge [9].

Pervious literature has linked leadership with KM, for instance, Tse and Mitchell [17] studied TL and knowledge creation theoretically, and suggested that open-mindedness norms can constitute a supportive environment that facilitates the relationship between TL and knowledge creation. Vera and Crossan [18] demonstrated that transformational leaders encourage individuals to break through boundaries and share their experiences within and across departments. Seba et al. [19] found that, within public organizations in the UAE, the main barriers to practicing of KS activities among employees were trust, the organizational structure, and the leadership style. A survey of 73 individuals working in software development organizations in China, carried out by Humayun and team [6], found that supportive leadership has the ability to stimulate the intentions of employees to seek knowledge through KM systems. Singh's [20] findings suggested that consulting and delegating behaviors exhibited by leaders are positively associated with knowledge creation and application. However, very little empirical research has examined the effect of TL on knowledge donating and collecting within the

education sector in developing countries like Iraq; thus, this research suggests the following:

- H1.** Transformational leadership will positively affect Knowledge donating in Iraqi public and private HE.
- H2.** Transformational leadership will positively affect knowledge collecting in Iraqi public and private HE.

B. TL in Public and Private Organizations

There is increasing interest from researchers in studying TL in the public and private sectors. Wright et al. [21] indicated that leadership can increase goal clarity among the employees of public organizations. Gilley et al. [22] showed that TL practice in public and private organizations is important for successful change and innovation. Additionally, Janadghi et al. [23] showed that TL plays a central role in success and increases the job satisfaction of employees in Iranian private companies. A comparative study on the effectiveness of 115 transformational leaders within private and public banks in India, carried out by Majumdar and Ray [24], detected the same level of TL in both sectors.

From the above discussion, it is clear that, there is a lack an empirical study to focus on the differences in the pattern of relationships between TL and knowledge donating and collecting in both public and private sectors, particularly in the Iraqi HE environment (see Fig. 1). Thus, this research suggests:

- H3.** There is a significant difference in the impacts of TL on knowledge donating between public and private HEIs in Iraq.
- H4.** There is a significant difference in the impacts of TL on knowledge collecting between public and private HEIs in Iraq.

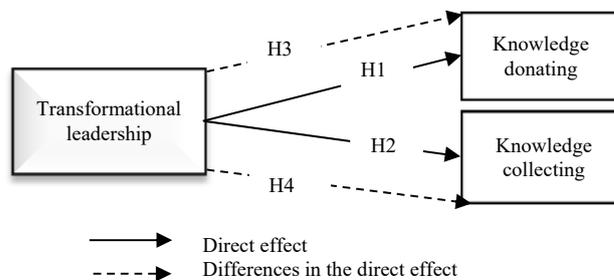


Fig. 1 Research model

III. METHOD

This research used a mixed method approach to examine the impact of TL on donating and collecting knowledge and the differences between public and private Iraqi HEIs. Researchers use this approach to help them answer research questions that cannot be answered by quantitative or qualitative approaches alone [25]. A self-administered questionnaire, using the delivery-and-collection method of distribution, was used.

The items were measured using five-point Likert scales ranging from 1-strongly disagree to 5-strongly agree. TL was measured using a multifactor leadership questionnaire-MLQ

[26] with 16 items including four constructs idealized influence, inspirational motivation, intellectual stimulation and individualized consideration. KS was measured using eight items reflecting the exchange of teaching-related knowledge and skills among teaching staff through the donating and collecting of knowledge. These items were developed from Hooff and Weenen [15].

Then semi-structured face-to-face and telephone interviews were conducted to collect the data for the qualitative stage with 12 leaders (six from each sector). The interviews were analyzed using NVivo 11 software.

The population for this study consisted of academic teaching staff from public and private HEIs in Iraq. A total of 500 questionnaires were sent to public HEIs, while 300 were sent to the private colleges. Of these, 350 from the public HEIs and 230 from the private colleges were usable for analysis.

IV. DATA ANALYSIS AND RESULTS

The research used structural equation modelling (SEM) with AMOS v.24. SEM establishes a measurement and a structural model to analyses the relations between factors as

suggested by Hair et al. [27]. The measurement model addresses and evaluates the reliability and validity of the indicators for measuring the hypothetical constructs. The structural model addresses the relations among the unobserved variables, specifying the direct and indirect relations among them. Thus, it deals with the causal relations among the variables according to the proposed hypotheses

A. Measurement Model Analysis

Three constructs, TL and knowledge donating and collecting were measured using 24 items. confirmatory factor analysis (CFA) with AMOS v.24 was used in this research to evaluate the convergent and discriminant validity by investigating factor loadings and average variance extracted (AVE), which were deemed significant if they were 0.5 or higher [27]. The reliability was assessed based on the Cronbach's alpha and composite reliability (CR), each of which should exceed 0.7 [28]. Table I shows that the convergent validity and internal reliability are satisfactory since all factor loadings, CR and AVE values are acceptable and significant.

TABLE I
MEASUREMENT MODEL RESULTS FOR PUBLIC AND PRIVATE COLLEGES

Constructs	Code of item	Public N= 350				Private N= 230			
		Loading	AVE	CR	α	Loading	AVE	CR	α
TL	TL1	0.819				0.804			
	TL2	0.851				0.882			
	TL3	0.905				0.802			
	TL4	0.859				0.850			
	TL5	0.813				0.772			
	TL6	0.900				0.782			
	TL7	0.876				0.842			
	TL8	0.853	0.74	0.900	0.91	0.767	0.72	0.88	0.89
	TL9	0.888				0.856			
	TL10	0.879				0.901			
	TL11	0.878				0.883			
	TL12	0.859				0.857			
	TL13	0.812				0.867			
	TL14	0.832				0.770			
	TL15	0.868				0.802			
	TL16	0.833				0.821			
Knowledge donating	KD17	0.807				0.832			
	KD18	0.817	0.65	0.88	0.85	0.854	0.72	0.87	0.88
	KD19	0.795				0.882			
	KD20	0.771				0.772			
Knowledge collecting	KC21	0.836				0.845			
	KC22	0.874	0.75	0.89	0.89	0.835	0.70	0.88	0.86
	KC23	0.850				0.870			
	KC24	0.800				0.779			

Not: AVE = average variance extracted, α = Cronbach's Alpha

TABLE II
DESCRIPTIVE ANALYSIS, CORRELATION AND DISCRIMINANT VALIDITY OF THE MODEL

Construct	Public=350					Private =230				
	Mean	S. D	1	2	3	Mean	S. D	1	2	3
1)TL	3.450	0.889	0.74			3.311	0.910	0.72		
2) KD	3.552	0.894	0.243*	0.65		3.460	0.895	0.232*	0.72	
3) KC	3.562	0.895	0.327**	0.242*	0.75	3.360	0.876	0.345**	0.342**	0.70

Note: S.D = Standard Division

The research assessed discriminant validity by using the criteria established by Fornell and Larcker [29]. According to

them, the AVE should be greater than the squared correlation between two constructs. Table II shows the measures utilized

in this research demonstrate internal consistency for public and private HEIs in Iraq.

B. Measurement Invariance across Groups

The research used multi-group CFA with AMOS v.24, to test the differences across public and private sectors, as suggested by Byrne [30]. The primary aim here is to explore whether the response characteristics for each item are interpreted similarly across groups. A baseline model (configural invariance) was determined by combining the two groups (public and private samples). The measurement model (configural invariance) was evaluated using the fitness of fit indices, as shown in Table III, and include: (1) Absolute fit indices, this includes χ^2/df , and the root mean square error of approximation (RMSEA) and 2) the Model comparison indices. The fit indices used most often are the incremental fit measurement, which includes a normed fit index (NFI), and comparative fit index (CFI) [27]. These results indicate that configural invariance is attained. Then, the metric invariance was evaluated for the constructs across groups to assess whether the factor loadings for each scale indicator are identical across groups, accordingly, the chi-squared (χ^2) value was used to compare between the unconstrained model (configural model-step 1) and the constrained equal model

(step 2). A non-significant χ^2 value at $p < 0.05$ for the differences between the two models shows that the model has measurement equivalence across groups because changes in the χ^2 values are sensitive to the sample size [30].

This step increased the χ^2 value from 1219.396 to 1220.439 with $df = 912$. Since the metric invariance (step 2) is nested within the configural invariance (step1), the χ^2 value differences equal 1.043 with 7 df, which is not-significant at 0.05. Thus, metric invariance was supported across the public and private HE in Iraq.

C. Structural Model Analysis

The results from SEM, as shown in Table IV and Figs. 2 and 3, found the structural model fits the data and lie within the recommended criteria in both sectors. *H1* is concerned with the effect of TL on knowledge donating, the path coefficients were confirmed at levels 0.767 and 0.592 for public and private colleges, respectively, and significance shown by $p < 0.05$ and $p < 0.01$, indicating that *H1* is supported.

Table IV shows that TL is affect knowledge collecting 0.782, 0.718 as predicted in Hypothesis 2 in both sectors, supporting *H2*.

TABLE III
 MEASUREMENT INVARIANCE FOR MULTI-GROUP

Construct	χ^2	$\Delta\chi^2$	df	Δdf	χ^2/df	GFI	NFI	CFI	RMSEA
Model 1: Unconstrained (configural invariance)	1219.396	-	912	-	1.337	0.911	0.922	0.985	0.030
Model 2: constrained (metric + invariance)	1220.439	1.043	919	7	1.328	0.909	0.920	0.989	0.043
Recommended criteria	$\chi^2/df = \leq 2-5$, GFI, NFI, and CFI $= \geq 0.90$, RMSEA $= < 0.05-0.08$								

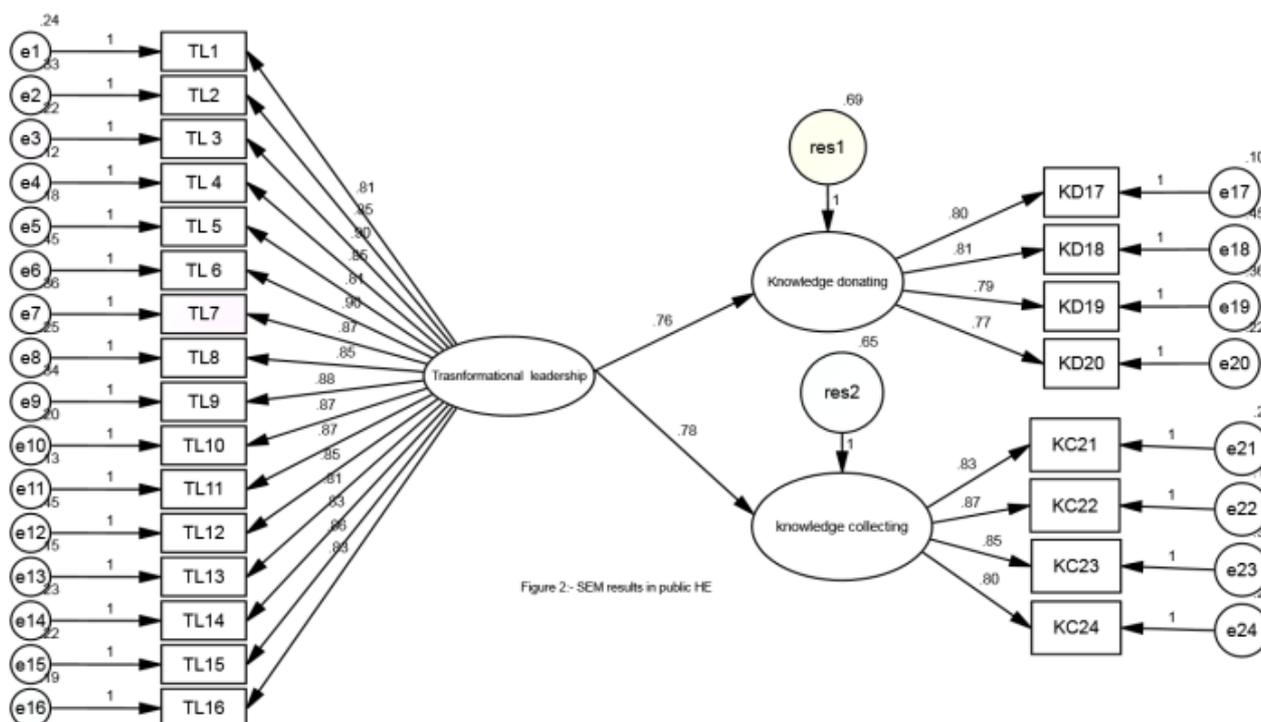


Figure 2- SEM results in public HE

Fig. 2 Results of SEM in public HE

TABLE IV
 RESULTS OF STRUCTURAL MODEL

Hypothesis	Hypothesis path	Estimate	
		Public	Private
H1	TL→ knowledge donating	0.767**	0.592*
H2	TL → knowledge collecting	0.782**	0.718**
Fit indices	Public	$\chi^2=338.92$, $\chi^2/df= 1.345$, CFI=0.968, NFI=0.933, RMSEA=0.042	
	Private	$\chi^2= 381.218$, $\chi^2/df= 1.519$, CFI=0.952, NFI= 0.916, RMSEA=0.036	



Fig. 3 Results of SEM in private HE

TABLE V
 MULTI-GROUP ANALYSIS-STRUCTURAL PATH DIFFERENCES

Structural path	Model	χ^2	df	$\Delta\chi^2$	Δdf	CFI	Sig p
TL→ knowledge donating	Unconstrained	645.708	480	-	-	0.965	-
	Constrained	663.843	488	18.135	8	0.972	p<0.05
TL→ knowledge collecting	Unconstrained	653.676	476	-	-	0.982	-
	Constrained	672.888	486	19.212	10	0.985	p<0.05

H3 and H4 predicted differences in the pattern of relationships between the independent and dependent variables across sectors. Multiple-group SEM testing was used to assess whether any of the significant hypothesized relationships in the baseline model differed for the public and private universities. Thus, the structural coefficients in both sectors were left unconstrained for each relationship, and then equality constraints were added onto the structure weights. Significant differences in the χ^2 value and df between the unconstrained and constrained models at $p < 0.05$ would indicate differences between the sectors. Table V shows the two models are significant at $p < 0.05$. These results indicate that there are differences between the structural models for the Iraqi public and private HE sectors. Thus, hypotheses H3 and H4 are confirmed.

V.DISCUSSION

The results of the SEM supported the hypothesized relations between TL and knowledge donating and collecting in both public and private Iraqi HE. The findings of this research demonstrate that leaders in Iraq's public and private HEIs create opportunities that stimulate and encourage KS among teaching staff by challenging them to find technical solutions to problems, and to seek new approaches regarding teaching materials, teaching files, notes, and skills within and outside of their departments and universities.

Multi-group SEM (H3 and H4) findings, in the quantitative stage indicated that, there are differences in the effect relationships between sectors, and the effect of TL on knowledge donating and collecting was much higher in the public HEIs than the private colleges unlike the findings from

previous studies. The interview findings hint at strategies used by the leaders that might enhance their faculty members' KS activities. All interviewees from both sectors stated that they used monetary and non-monetary incentives to promote KS among staff, although the practice seems to be more dominant in the public HEIs than the private colleges. For instance, within the public universities, one of the leaders said:

"I always use non-monetary rewards besides material rewards, such as thanks, gratitude, appreciation and promotion, when members of staff establish training courses or participate in student symposia--- in my view this strategy encourages the staff to get involved in activities, ultimately contributing to the exchange of knowledge within the department" (HD3-public).

Within the private sector, one leader commented:

"It is true that our college financially rewards members of staff in the case of their participation in formal and informal activities to exchange ideas and observations that facilitate the dissemination of research and the development of teaching methodologies, but not always because this depends on our budget" (DD1-private).

Reward systems reported in the literature are important in motivating organizational members' performance and helping to produce excellent KS abilities among them [31]. Such systems also highlight the things that the organization feels are important. It is argued that employees tend to generate new knowledge and share their existing knowledge when their leaders motivate them financially [32]. Oldham [33] mentioned that recognition and appreciation for the employees plays an important role in getting them to engage in KS activities.

Although the prior literature [34] has mentioned that the use of reward systems as a strategy to promote KS activities is more effective in the private sector than the public sector, the results from the interviews conducted for this research contradict such a view. It is obvious that the leaders' strategies in Iraqi HEIs regarding financial rewards vary according to the budget their sector, and it seems more important in public than private colleges.

"*Performance appraisals*" are another strategy used in HE, as the majority of the leaders in both sectors mentioned that the practice of KS by faculty members was related to their performance appraisals. The strategy appears to be imperative for Iraqi public HEIs:

"Members of staff in my department are aware that the assessment of their performance depends on their establishment of workshops or sessions within and outside of the department and the university. Such events are aimed at encouraging them to exchange and discuss their experiences and skills, as well as the methodologies of the teaching profession" (HD4-public).

On the same topic, one of the leaders said:

"Faculty members' performance is measured through their participation in local and international scientific conferences, the publishing of research papers, and organizing discussion groups to discuss and present the results of their published research papers so that other

staff in the department can benefit, in addition to their commitment to the job" (HD3-public).

Within private colleges too, the performance of the teaching staff is important, but here it does not seem to be related to promotions, scholarships, etc:

"The performance of teaching staff who have permanent contracts with the college is measured based on their job commitment and their participation in scientific activities, conferences or the setting up of seminars" (HD2-private).

The results reflect that the practice of KS is linked with the performance appraisal of the teaching staff, which confirms Ling's et al. [35] view that the most effective method of promoting KS is to link it to the performance measurement of the employee. When members of staff realize that their KS is related to their evaluation, they are certainly likely to try not to get a low ranking and are more likely to seek out KS practices and consider them a part of their job responsibilities [33].

VI. CONCLUSIONS

The aim of this research was to investigate the impact of TL on knowledge donating and collecting, and the differences between Iraq's public and private HEIs in these relationships. TL within academic environments generates commitment from teaching staff, and produces a greater quality of work and more creative problem solving. It has the ability to change values and create a culture with a shared vision. The research found that TL would be ideal in an educational context as it would promote KS activities in Iraqi HE. This gives an indication as to the most important factors that influence KS and provides a clue regarding how HEIs can promote KS activities. Therefore, leaders need to stimulate their teaching staff to practice KS activities within HE in Iraq by encouraging them to establish sessions, lectures, workshops, and other formal and informal means of communication. Additionally, the research reveals that leadership is not enough to encourage KS within Iraqi HE environment, even under TL. It indicates that the organizational context, such as incentives and performance appraisals are important in the TL-KS processes relation. Thus, leaders, as the decision makers in Iraqi HEIs, should establish appropriate systems of rewards such as bonuses and promotions. Such reward systems were identified as existing in public HEIs already but need to be promoted more in private colleges.

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