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Organizational Effectiveness Through Transformational Leadership and Technology Innovation: A Systematic Literature Review and Future Research Agenda

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Abstract

Taking an upper echelon theoretical perspective in public sector higher education, this systematic literature review had quadruple objectives. First, to identify the gap in the existing literature on transformational leadership (TL). Second, to suggest a comprehensive instrument for a higher-order construct of TL. Third, to propose a rigorous research framework for future empirical research, and fourth, to propose an appropriate research methodology for that empirical research. Using a systematic literature review approach, various databases were accessed to obtain current literature on the topic. Transformational leadership constructs were extensively explored for current concept developments and available measurement scales. A research model was proposed according to transformational leadership, and upper echelon theoretical frames and appropriate research methodology was recommended. The study found that the research on the TL, its antecedents, factors, and outcomes were still being developed. Various dimensions with different conflicting and complementing questionnaires and numerous instruments from the literature on TL construct have been identified. As a result, a research framework was proposed to conduct future research on transformational leadership and organisational effectiveness with a mediating role of technology innovation to fill the acknowledged gap. This study is among the first research to propose technology innovation in higher education context. Two of the newly launched techniques IPMA and CTA are recommended to enhance the robustness of any study involving technology innovation.

Keywords: Transformational Leadership, Organisational Effectiveness, Technology Innovation, Theoretical Framework

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Introduction

Organisational effectiveness is the core purpose of management leadership and strategic processes. Protecting organisational existence and attaining and maintaining their market superiority is the top

priority of every organisation. Transformational leadership is seen as the most attractive and useful tool to change and transform the whole organisation to increase performance and effectiveness (Chen, Sharma, Zhan, & Liu, 2019). The new lightning-speed pace of technology advancement has not only offered numerous opportunities for contemporary organisations but has also posed various threats and challenges. The obsolescence of existing skills and technology have turned the table of various conglomerates who now face decline from being the market leaders down to the retrenchment and divestiture levels.

Moreover, intense competition posed by internationalisation and globalisation has increased the need for such technological innovation, which may enable an organisation to make more informed and vigilant decisions. This situation has intensified the role of visionary and dynamic transformational leadership in attaining and maintaining organisational effectiveness (Islam, Jantan, Hashim, Chong & Abdullah, 2018; Hatzijordanou, Bohn, & Terzidis, 2019). In this complex, challenging and high-speed technological era, it is imperative to explore the best methods which are used by organisations and recommended by the scholars to avoid market-oriented competition and technological threats. This article provides an updated literature review to obtain insight from both practitioners and scholars, along with a theoretical understanding of the relationship between transformational leadership and organisational effectiveness with the intervening role of technology.

Research Context

Keeping in mind the performance and effectiveness levels of higher education institutions, and its necessity for transforming to the next level, the intention is to investigate the application and appropriateness of transformational leadership in the context of higher education (Khan et al., 2019). The concept of transformational leadership (TL) was first led by Burns (1978) who portrayed TL as a leadership style in which “leaders and their followers raise one another to higher levels of morality and motivation”. This idea was further developed by (Bernard M Bass, 1985) who associated TL with high performance and projected various characteristics of transformational leaders, such as integrity, clarity of goals, high expectations, encouragement, help, recognition, stimulation and inspiration. As transformational leadership impacts human behaviour to bring about transformation, change and success in the organisation, it is believed that it can change human behaviour in the workplace to foster success, innovation and effectiveness at the organisational level (Adriani, 2019; Li et al., 2019). Pioneers of TL theory, Bernard M Bass and Avolio (1994) asserted that transformational leadership induces some unique behaviours in leaders to attain success, which can be summarised as four elements of TL: idealised influence, inspirational motivation, intellectual stimulation and individualised consideration. To become acquainted with the role of TL in organisational effectiveness, it is imperative to know how Bass and Avolio’s (1994) concept of TL has progressed, as well as its various perspectives and measurement approaches. As such, this information will be used to formulate a model of effectiveness based on the upper echelons theory of Donald C. Hambrick and Mason (1984) in order to extend the TL model.

The Structure of the Transformational Leadership Construct

As a construct, transformational leadership (TL) has been proposed, explored and empirically tested in numerous forms. The most commonly used and referred structure of TL is a second-order reflective formative construct which, as previously mentioned, consists of four dimensions - idealised influence, inspirational motivation, intellectual stimulation and individualised consideration. The initial TL construct conceived by Burns (1978) and Downton Jr (1980), and explicitly explained by Bernard M. Bass (1985), consisting of five dimensions, including charisma as the fifth element. This additional element was later merged into inspirational motivation, based on the feedback and related literature, making it a four-dimensional second-order construct.

Transformational Leadership and Organisational Outcomes

The success of leadership style can be seen in the form of a successful leader or a successful organisation (Daft, 2018). Although the success of a leader ultimately contributes to the success of the organisation, it is just a minor part, whereas organisational outcomes are comprehensive and all-inclusive (Bernard M Bass & Avolio, 1994). Hence, it seems more appropriate to assess the effect of a construct for a more inclusive and comprehensive outcome. The literature matrix in Table 1 illustrates that there has been a lower tendency for taking organisational outcome as an endogenous variable for TL studies.

Instead, various researchers have indicated that transformational leadership has a strategic nature and has a positive relationship with organisational outcomes. Burns (2016) indicated that transformational leaders maintain a positive attitude towards their expectations and believe that by exerting all their passion and energy for what they think is the ideal situation for the overall benefit of the organisation. As such, they only care about positive change and success. Additionally, Tepper et al. (2018) argued that transformational leadership develops and motivates followers to achieve high performance, going beyond financial rewards. Leaders, then encourage workers intellectually and creatively to transform their interests and ambitions into a vital part of the organisation's mission and vision. Such leaders elevate the followers by their attention for high achievement and motivate them to perform beyond expectations. Thus, high performance by individuals ultimately leads to the effectiveness of the organisation (Aga, Noorderhaven, & Vallejo, 2016).

Methodology

A thorough search was conducted in order to identify published samples which examined the antecedents, correlations and consequences of transformational leadership. A search strategy was employed similar to that of Dixon, Weeks, Boland Jr, and Perelli (2017) and Javed et al. (2017). Articles were extensively investigated through four management related electronic databases: EBSCO, the Web of Science, Scopus and ScienceDirect, from the 1st of January 1998 to the current period. Using a methodical research process, a systematic review established criteria for which to select and organise the articles into five genres. The first included only direct samples which overtly measured transformational leadership (TL). Second, articles which not only discussed TL as a theme but purposely discussed well-established outcomes for TL and provided empirical evidence on their hypothesised assumptions were included. The third criterion for inclusion was the provision of a deep-rooted mediator or moderating variable discussed by the researcher to extend the application of TL in various perspectives and backgrounds. The fourth inclusion criterion included updated links of TL with organisational effectiveness through a mediator or moderating variables. Finally, articles which followed the theoretical assumptions of the upper echelon theory were included.

Objectives

Keeping in mind the theoretical perspective and the existing body of knowledge, this study has four objectives. The first aim of this qualitative research was to identify the gap in the existing literature and construct a framework in the areas of transformational leadership, its antecedents and its relevant exogenous and endogenous variables. Second, to find the various instruments used for TL research and to establish a theoretical framework of transformational leadership and its impact on the organisation's effectiveness in the era of the fourth industrial revolution. The third was to propose a complete theoretical and conceptual framework for a future study and, fourth, to suggest an appropriate methodology to execute research according to current research techniques and methodologies.

Findings and Discussion

The review of a vast amount of literature on transformational leadership conducted in this study has indicated the current status of research on the TL, its antecedents, factors and outcomes. Although transformational leadership is considered to be a strategic phenomenon, Bernard M Bass and Avolio (1994) explored its relationship with organisational effectiveness in their early seminal work. It was

interesting to find that 66% of the studies discussed employee-related outcomes of TL. This included 44%, 12% and 10% of studies having employee behaviour, employee satisfaction and employee performance, respectively, as their dependent variables, whereas a minimal number of studies (12%) took organisational outcome as the endogenous variable of TL. These figures and facts necessitated a more comprehensive empirical research to assess the effects of TL on organisational outcomes. Further elaboration of these findings is explained in the following sections.

Table 1: Literature Review and Gap Identification for Transformational Leadership

Author	Year	IV	Moderator/Mediator	DV	Outcome	Country
Adriani	2019	TL, Technology	--	Firm Performance	TL and IT significantly affect firm performance among shariah cooperatives.	Indonesia
Avolio, Zhu, Koh, and Bhatia (2004)	2004	TL	Psy-Empowerment, Structural distance	Organisational commitment	The proposed model was partially supported	Singapore
Baharom, Sharfuddin, and Iqbal (2017)	2017	TL	--	Deviant work behaviour (DWB)	Literature review	NA
Bernard M Bass and Avolio (1994)	1994	TL		Organisational effectiveness	Conceptual paper	NA
Bushra, Ahmad, and Naveed (2011)	2011	TL	--	Job satisfaction, organisational commitment	Hypothesised relationships were supported significantly	Pakistan
Caniëls, Semeijn, and Renders (2018)	2018	Proactive personality	TL, Mindset	Work engagement	Multi moderated model was supported	Netherlands
Carreiro and Oliveira (2019)	2019	TL	--	Diffusion of innovation	The relationship was supported significantly	Portugal
De Clercq and Belausteguigoitia (2017)	2017	Task conflict	TL, tenacity and passion for work	Job satisfaction	Multi-mediation model was supported	Mexico
Eberly, Bluhm, Guarana, Avolio, and Hannah (2017)	2017	TL	Extreme context exposure, job embeddedness	Turnover intentions	A moderated mediation model was supported	USA
Elrehail, Emeagwali, Alsaad, and Alzghoul (2018)	2018	TL and Authentic Leadership	Knowledge sharing	Innovation	The moderated model was supported	Jordan
Galante and Ward (2017)	2017	TL	Athlete status	Self-esteem	A proposed mediation model was supported	USA
Grill, Nielsen, Grytnes, Pousette, and Törner (2019)	2019	TL, Passive/avoidant leadership		Occupational safety	Different levels of leadership practices were observed	Europe

Author	Year	IV	Moderator/Mediator	DV	Outcome	Country
					among construction managers.	
Groves (2020)	2020	TL	Follower values, Org change magnitude	Change resistance, extra effort	A moderated mediation model was supported	USA TL 5 Ds 20 items
Hasan akbari, Younesi, and Zohoori (2017)	2017	TL		Innovation	Significant relationship supported	Iran
Hentschel, Braun, Peus, and Frey (2018)	2018	TL	Perceived communality, Leadership effectiveness	Promotability	A communality-bonus effect was supported for male transformational leaders over females.	(Not Mentioned)
Iqbal, Baharom, and Shariffuddin (2017)	2017	Organisational factors	TL	DWB	Significant	Pakistan
Jena, Pradhan, and Panigrahy (2018)	2018	Employee engagement	Psychological well-being, Transformational leadership	Organisational trust	Parallel multi-mediation model supported	India
Kao and Tsai (2016)	2016	TL	Coaching competency	Athlete Satisfaction	Partial mediation supported	USA
Le et al. (2018)	2018	TL	Self-Efficacy and Optimism	Knowledge sharing		
Leithwood and Jantzi (2000)	2000	TL	Family educational culture, organisational conditions	Participation identification	Proposed model was supported	Canada
Meyer, Dean, and Meyer & Dean (1990)	1990	TL			Qualitative: An upper echelons perspective on TL	NA
Militaru (2014)	2014	TL	Knowledge and innovation	University performance	A direct relationship was supported, but not the indirect one.	Romania
Monje Amor, Abeal Vázquez, and Faíña (2019)	2019	TL	Structural empowerment	Work engagement	Partial mediation was supported	Spain
Mohammadkhani and Gholamzadeh	2016	TL, TRL		Women's glass ceiling beliefs	Theoretical model was supported by data	Iran
Muralidharan and Pathak (2018)	2018	CLT culturally endorsed TL, the sustainability of society	Societal sustainability	Social entrepreneurship	Partial mediation supported	GEM Survey
Ng (2017)	2017	TL	Affective, motivational,	Performance outcomes	Multiple mediation	Literature review

Author	Year	IV	Moderator/Mediator	DV	Outcome	Country
			identification, social exchange, and justice enhancement		pathways were identified from the literature	
Niessen, Mäder, Stride, and Jimmieson (2017)	2017	TL	Emotional exhaustion, thriving	Task mastery, proactivity	A moderated mediation model was partially supported	Germany
Para-González, Jiménez-Jiménez, and Martínez-Lorente (2018)	2018	TL	HRM practices, innovation	Organisational performance	All relationships were supported significantly	Spain
Prasad and Junni (2016)	2016	TL and TR	Environmental dynamism	Organisational innovation	Partial mediation was supported	USA
Svendsen, Unterrainer, and Jönsson (2018)	2018	TL	Job autonomy	Promotive voice, prohibitive voice	Two-way moderated model was partially supported	Norway
Top, Akdere, and Tarcan (2015)	2015	TL, Job satisfaction, Organisational Trust		Organisational commitment	Public and private sector employees differ in their relationship with TL and job satisfaction, but not in trust.	Turkey
Wang, Zheng, and Zhu (2018)	2018	TL	Psychological capital	Emp voice Behaviour	Psy cap fully mediated the TL-VB relationship	China
Wong and Berntzen (2019)	2019	TL	Electronic dependence and team task interdependence	Leader-member exchange	TL was related negatively to LMX quality	Norway
Xenikou (2017)	2017	TL, Transactional Contingent Reward	Perceived innovation and goal culture orientations	organisational identification:	Multi-dimensional mediation was partially supported.	China
Zhang, Zheng, and Darko (2018)	2018	TL	Innovation climate, project requirements	Innovation	Both the mediation and multi-level moderation were supported	China
Zuraik and Kelly (2019)	2019	TL	Innovation climate	Exploratory and exploitative innovation	The direct and mediated relationship was supported	USA

Instrumentation for a Higher-Order Construct

Transformational leadership is a multi-dimensional construct (Connaughton, Lawrence, & Ruben, 2003) and, as such, must be reflected through measurement. Being an extensively used leadership theory, the construct of transformational leadership has been measured through various instruments from different perspectives and backgrounds around the world. The existing literature provides

various instruments to measure the TL construct in a higher-order construct (HOC) and a single-dimensional construct (See Table 2). The most extensively used Multifactor Leadership Questionnaire (MLQ) was developed by Bernard M Bass and Avolio (1990) as a comprehensive psychological inventory. Originally, Bass' (1985) conceptualised transformational and transactional leadership were categorised over seven dimensions as “charisma, inspirational motivation, intellectual stimulation, individualised consideration, contingent reward, management-by-exception and laissez-faire leadership”. He then merged the two dimensions of charismatic and inspirational motivation, thus reducing the instrument to six factors (Leong & Fischer, 2010). Bass’s updated MLQ was based on thirty-six questions regarding leadership style and nine questions related to leadership outcome. The leadership style section comprised of five scales of transformational leadership, two scales of transactional leadership, two scales related to avoidant or passive behaviour and three scales to test the organisational outcomes. The MLQ is widely used to differentiate between effective and ineffective leaders at various organisational levels, administered through a ‘5 or 7’ point Likert scale.

Table 1: Comparative Matrix of Various TL Instruments

Instrument	Source	Items	Total Scales	TL Dims	Transformational Leadership Dimensions
MLQ (360)	Alimo-Metcalfe (1998)	81 (36+45)	9	5	(1) Idealised Influence - Attributes (2) Idealised Influence - Behaviours (3) Inspirational Motivation (4) Intellectual Stimulation (5) Individual Consideration
TLQ	(Lievens Pascal Van Geit Pol Coetsier, 1997)	12	4	4	(1) Idealised Influence (2) Inspirational Motivation (3) Intellectual Stimulation (4) Individual Consideration
MLQ (New)	Bernard M. Bass and Avolio (2017)	20	5	5	(1) Builds Trust (2) Acts with Integrity (3) Encourages Others (4) Encourages Innovative Thinking (5) Coaches & Develops People
PLQ (Principal)	Jantzi and Leithwood (1996) Mees (2008)	24	6	6	(1) Vision Identification, (2) Modelling, (3) Goal Acceptance, (4) Individualised Support, (5) Intellectual Simulation, and (6) High Performance
MLQ (Short)	Slocum and Hellriegel (2007), Bernard M Bass and Riggio (2010) Mao, Chiang, Zhang, and Gao (2017)	16	4	4	(1) Idealised Influence (2) Inspirational Motivation (3) Intellectual Stimulation (4) Individual Consideration

Alimo-Metcalfe (1998) introduced an extended MLQ (360) to incorporate a 360-degree input based on the study of Bass (1990). Slocum and Hellriegel (2007) produced a smaller variant of TL measurement instruments covering the four main dimensions of the construct and this has been administered by various researchers including Bernard M Bass and Riggio (2010), Song, Kang, Shin, and Kim (2012) and Mao et al. (2017). This TL survey requires answers from the participants on four leadership attitudes on a '5 point Likert scale'.

The educational versions of MLQ, known as the Student Leadership Practices Inventory (SLPI), was developed by Posner and Kouzes (1988) to specifically measure the level of transformational leadership characteristics in college or university students. The SLPI measures

transformational leadership among five key qualities: model the way, inspire a shared vision, challenge the process, enable others to act and encourage the heart, with twenty items distributed evenly among the five dimensions. Alimo-Metcalfe and Alban-Metcalfe (2001), then proposed a more detailed and extended form of the TL questionnaire Alimo-Metcalfe and Alban-Metcalfe (2001) Alimo-Metcalfe and Alban-Metcalfe (2001) Alimo-Metcalfe and Alban-Metcalfe (2001) Alimo-Metcalfe and Alban-Metcalfe (2001) Alimo-Metcalfe and Alban-Metcalfe (2001), which has nine dimensions of TL with seventy questions.

It was also observed that various demographic variables were also used as control variables which included information such as work experience, education, gender, personality traits and emotional intelligence (Tonkin, 2013). Such variables helped the researcher and other scholars to identify if the relationship supported in the empirical study was just a coincidence or natural. It also tested whether there was a causal relationship, direct relationship or intervening relationship among the variables (Black, 2015). Additionally, the relationships were tested for differing strengths and if the relationships have the same or varying effects under different conditions.

Proposed Research Model

Based on the extensive literature review, this study has proposed a comprehensive research framework for future research on transformational leadership, taking insights from the upper echelon theory and socio-technical system perspective ((Donald 2007; Meyer et al. 1990 Haque et al., 2018). Being a strategic management theory, the upper echelons theory (UET) explains the link between observable characteristics of the organisational leadership and their strategic choices or organisational outcomes (See Table 3). Donald C. Hambrick and Mason (1984) proposed that managerial characteristics can be used to partially predict organisational outcomes based on the notion that the decision-making choices of top managers are influenced by their cognitive base and values. Another central assumption of the UET perspective was that the effects of top managers could be assessed based on the characteristics of the entire management team, rather than based on the attributes of each top executive (Donald 2007; Meyer et al., 1990). This notion was based on the concept that power is equally shared amongst members of the dominant coalition in an organisation. Therefore, other researchers conducted studies assessing the collective effect of entire top management teams, considering the CEO as an equal member of a top management team (Finkelstein & Hambrick, 1996; Finkelstein, Hambrick, & Cannella, 2009; Lin & Lin, 2019; Islam, Hunt, Jantan, Hashim & Chong, 2019)

Table 3: Literature Matrix for the Upper Echelons Theory

Article	Research Outlet	Country	Sample Size	Sector	TMT Position
Abernethy, Bouwens, and Van Lent (2010)	Management Accounting Research	Netherlands	128	Mfg.	CEO
A. E. Bass (2019)	Journal of Leadership & Organisational Studies	USA	73 Firms	Healthcare	Entire TMT
Bobe and Kober (2018)	Studies in Higher Education	Australia	39	HE	University Deans
Burkert and Lueg (2013)	Management of Research Accounting	Germany	52	Mfg.	CEO, CFO
Carpenter, Geletkanycz, and Sanders (2004)	Journal of Management	USA	NA	NA	(Conceptual Paper)

Article	Research Outlet	Country	Sample Size	Sector	TMT Position
Clapp-Smith, Vogelgesang, and Avey (2008)	Journal of Leadership & Organisational Studies	USA	89	Stores	Entire TMT
Díaz-Fernández, González-Rodríguez, and Simonetti (2015)	European Management Review	Spain	177	MNCs	TMTs
Dubey et al. (2018)	International Journal of Production Research	India	300	Mfg.	senior quality managers
Donald C. Hambrick and Mason (1984)	Academy of Management Review	USA	NA	NA	(Seminal Work)
Donald C. Hambrick (2007)	Academy of Management Review	USA	NA	NA	(An Update in Theory)
Donald C Hambrick, Humphrey, and Gupta (2015)	Strategic Management Journal	USA	1094	Mfg.	Entire TMT
Hartmann et al. (2010)	European Accounting Review	Netherlands	196	Mfg.	Superiors to middle managers
Hiebl (2014)	Journal of Management Control	USA	NA	NA	(UET in Accounting)
Huang, Lee, and Tsai (2018)	Journal of Leadership & Organisational Studies	China	435 firms	Listed	Entire TMT
(Karriker, Madden, & Katell, 2017)	Journal of Leadership & Organisational Studies	USA	241	Students	Team Leaders
Kyj and Parker (2008)	Abacus	USA	70	Mfg.	Entire TMT
Lee, Elbashir, Mahama, and Sutton (2014)	International Journal of Accounting Information Systems	Australia	419	Mfg.	Entire TMT, CIO
Lee et al. (2014)	The Accounting Review	Australia	419	Mfg.	Top and middle managers
Naranjo-Gil (2016)	Sustainability	Spain	457	Mfg.	Entire top management team,
Naranjo-Gil, Hartmann, and Society (2007)	Accounting, Organisations and Society	Spain	103	Mfg.	Entire TMT

Article	Research Outlet	Country	Sample Size	Sector	TMT Position
Pavlatos (2012)	Journal of Applied Accounting Research	Greece	100	Mfg.	CFO
Pinho and Franco (2017)	Higher Education Policy	Portuguese	127	HE	CIOs in HEIs.
Speckbacher and Wentges (2012)	Management of Research Accounting	Austria, Germany	304	Mfg.	Entire TMT

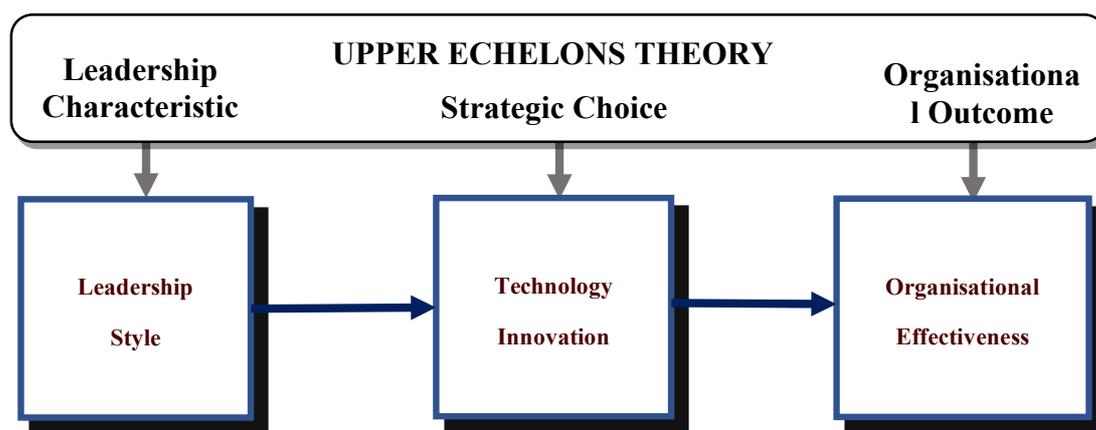


Figure 1: Theoretical Framework: An Upper Echelons Theoretical Perspective

Based on the literature on transformational leadership, organisational effectiveness and the upper echelons theory, we have proposed an explicit and specific research framework. The proposed framework aims not only to extend the transformational leadership body of knowledge by testing the mediating effects but also presents an empirical research framework, encompassing the strategic choice of the transformational leadership model that may help an organisation face the challenges of the fourth industrial revolution.

This conceptual model extends the theoretical avenues to the extent that it suggests taking the psychographic perspective of top management teams as leadership traits, instead of demographics. Therefore, the relationship between the upper echelon characteristics and the organisational outcome is intervened by the technology innovation. Leadership characteristics and their areas of strategic choices are presented in Figure 2, which shows an extended conceptual model of the upper echelons theory by Donald C. Hambrick and Mason (1984). The two areas which are proposed to be extended in the existing framework are highlighted. The proposed framework signposts the extension in the upper echelon characteristics as leadership style under the psychological characteristics section. Technology innovation and technology adoption are proposed in the strategic choice section to cover Industry 4.0 and SDG requirements.

This study has significant implications for academics and professional. First, it provides an extensive updated literature on transformational leadership with an upper echelon perspective. Second, it has suggested a framework for novice researchers to conduct future studies by taking technology innovation as a mediator to achieve organisational effectiveness in the higher education context.

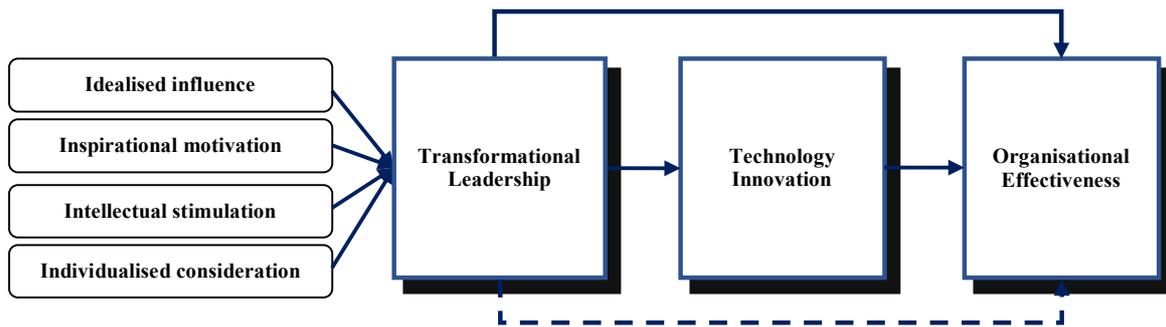


Figure 2: Proposed Research Framework

Proposed Research Methodology

The proposed model holds an objectivist world view and has its foundations based on a positivist nature, which can be tested empirically by conducting surveys to obtain primary cross-sectional data on four dimensions and sixteen instrument items of TL (Bernard M Bass & Riggio, 2010). The univariate and multivariate data normality should be tested by assessing skewness and kurtosis (Hair Jr, Black, Babin, & Anderson, 2014). Based on tertiary education in Pakistan, a sample of 396 out of a population of 38,173 of permanent academic and managerial employees working in public sector Pakistani higher educational institutions (Yamane, 1967), is proposed.

The higher-order formative nature of the transformational leadership construct needs to be tested with available data. For this purpose, a confirmatory tetrad analysis is recommended to provide empirical evidence on its structure which was formulated on the basis of theory (Hair Jr, Sarstedt, Ringle, & Gudergan, 2018). Being a complex model with a formative construct, the proposed research model requires data analysis using the partial least squares structural equation model technique (PLS-SEM) (Ringle, Sarstedt, Mitchell, & Gudergan, 2018). This statistical technique analysis requires parametric and non-parametric data in two phases: firstly, an outer or measurement model and, secondly, an inner or structural model assessment. The results in the form of R², F² and Q² provide the regression's coefficient of determination, effect size and predictive relevance, respectively. Harman's (1976) single factor score is recommended to be assessed to ensure the absence of a common method bias (Hair Jr, Hult, Ringle, & Sarstedt, 2017; Ringle et al., 2018). Importance-performance map analysis (IPMA) would explicate the importance and performance of the exogenous variable in relation to the endogenous variable (Hair, Risher, Sarstedt, & Ringle, 2019) and will add robustness to the PLS-SEM results (Hair Jr et al., 2018).

Conclusion, Research Limitation and Future Direction

Organisational effectiveness appears to be of great interest to the management scholars, which can be witnessed from the increasing trend of academic studies on the topic. This article has performed a conceptually ordered systematic literature review with archetypal coverage, taking an unbiased representation standpoint and is focused on research outcomes addressing the general scholastic viewpoint. A large number of scholars studied transformational leadership (TL) in the past three decades, and the trend is increasing. The existing literature witnessed that most of the TL studies tended to explore the effect on leadership outcomes and highlights a dire need for research on organisational effectiveness in a TL perspective. Similarly, a strategic leadership view was almost overlooked as a theoretical perspective when studying TL. Hence, the current study has proposed a comprehensive research framework for future empirical research. The proposed research model intends to fill the gap within four areas. Firstly, it suggests empirically testing the effect of the reflective formative higher-order construct of TL on a reflective construct of organisational effectiveness in order to provide updated evidence on its applicability. Secondly, it takes a socio-

technical perspective on the organisation and introduces technological innovation as a mediator in the relationship, as mentioned earlier. Thirdly, it takes an upper echelons theoretical perspective to advocate the use of the psychographic perspective of the upper echelons characteristic instead of demographics by taking transformational leadership as a leadership characteristic. Finally, the model takes technological innovation as the strategic choice of upper echelons to meet with the IR 4.0 requirements for achieving organisational effectiveness.

The study has several limitations in its nature and its accomplishments. The SLR process was completed using four of the research resources: EBSCO, Web of Science, Scopus and ScienceDirect. Several related studies may have been missed that were available in other online and published sources. The TL studies mostly overlooked organisational effectiveness because it focused on the inclusion of TL in the research title while searching the articles. It is also quite possible that some sources may have studied TL's effect on organisational effectiveness but did not mention TL in the title. Selecting the upper echelons theory as the main theory for strategic leadership, maybe limiting as there are other that theoretical perspective that others may find more appropriate. Finally, the proposed model has only one exogenous variable, which can be compared with other leadership styles, such as spiritual leadership and authentic leadership.

These limitations provide a gap for the upcoming scholars and researchers to conduct meta-analytical research covering all the available SLRs on the topic to provide further theoretical and empirical insights within the study of transformational leadership. The model also has its roots in the socio-technical system perspective, which is less explored in this study and can be performed in the future.

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