

Determining the Role of Transformational Leadership on Firm Performance through Organizational Innovation and Technological Innovation Capabilities

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Abstract

This study aims to address the influential role of TL on FP through organizational innovation and technological capabilities innovation. The unit of analysis in study is individual employees working in software industry of Pakistan. The proposed research method for this study is Quantitative method. Research design of this study is administrative survey method. The current study is performed in the software marketplace which is incredibly energetic industry in Pakistan. Moreover, respondents are chosen randomly from different software companies for avoiding any kind of biasness. A total of 395 survey questionnaire were collected from the software houses in Pakistan and 370 responses were completed. This study also uses statistically techniques such as reliability and structural equation model techniques for data analysis through AMOS and SPSS software. The empirical results show positive and significant influence of TL on FP. In addition, the findings of this study will help the firms to improve their business performance and improvements of new technological capabilities as well.

Keywords: Transformational Leadership (TL), Organizational Innovation (OI), Technological Innovation (TI) Capabilities, Firm Performance (FP),

Introduction

Curiosity is going upward on innovation and firm performance in the influence of transformational leadership. TL plays a fundamental role to boost the potential performance of their followers and supporters Bass (1995). Today, mostly organizations and institutes are facing energetic situation illustrated by globalization and quick technological change. Innovation is a key factor in the competitive advantage and achievement of organization as well (Woodman, Sawyer, & Griffin, 1993). TL develops the whisperer and spreader of innovative traditions to looking for the best probable FP (García-Morales, Jiménez-Barrionuevo, & Gutiérrez-Gutiérrez, 2012). Technological innovation (TI) capabilities are main key sources for organizational regeneration and accomplishment. Innovation facilitates organizations to more competent of looking for novel prospects and utilizing existing ones additionally protect themselves from unstable scenarios and highly uncertain.. Today, Product innovation is the lifeblood of firms competing in dynamic environments (Slater, Mohr, & Sengupta, 2014) . A firm which has a speedy and superior capability to restructure information in the innovation race over competitors, other than will improve more FP (Martín-de Castro et al., 2011). In addition, a Boston Consulting Group Senior Executive conducted a innovation survey in 2010 and stated that product innovation is the main strategic priorities among top three firms for 71% of companies (Andrew, Manget, Michael, Taylor, & Zablitz, 2013). Furthermore, they found that 70% of firms were supposed new-to-the-world products as “important” or “very important” to the company’s future.

Many studies argued that TL makes their followers innovative and empowers them to create an innovative environment (Jung, Chow, & Wu, 2003; Jung & Sosik, 2002). Therefore, many scholars have investigated the influence of TL on organizations in earlier period (Dvir, Eden, Avolio, & Shamir, 2002; Howell & Avolio, 1993; Lowe, Kroeck, & Sivasubramaniam, 1996). On the other hand, OI is also an important and essential factor due to aggressive competition among organizations (Camisón & Villar-López, 2014; Hamel, 2006). Recently, it has been shown significance of both technological innovation and FP, other than have still given little attention to understand the connection between them (Battisti & Stoneman, 2010; Damanpour, 2010; Damanpour, Walker, & Avellaneda, 2009). However, numerous studies consider the effect of TL on FP through different intermediate construct such as organizational learning and innovation (García-Morales et al., 2012), knowledge management (Gowen III, Henagan, & McFadden, 2009), absorptive capacity (García-Morales, Matias-Reche, & Hurtado-Torres, 2008; García-Morales, Lloréns-Montes, & Verdú-Jover, 2008) and competitive strategies (Menguc, Auh, & Shih, 2007). But there are limited studies are done in the context of FP. So, TL remains inadequately understood (García-Morales et al., 2012). Therefore, this study aims to address the influential role of TL on FP through organizational innovation and technological capabilities innovation.

The research question for this study arises; what is the role of TL to make an organizational innovative and enhancing firm performance through technological innovation capabilities? The contribution of this study in the software industry of Pakistan is two ways. Firstly, it highlights the importance of TL in the context of FP. Second, this study provides a framework that how TL can make their organization innovative and its impact on technological capabilities innovation and FP as well. The proposed research method for this study is Quantitative method, because this study is testing a theoretical frame model empirically. Research design of this study is administrative survey method. Moreover, respondents choose for this study randomly from different software companies for avoiding to any kind of biasness. In addition, the findings of this study will help the firms to improve their business performance and improvements of new technological capabilities as well.

Literature View and Developing Hypotheses:

Avolio and Bass (1995) highlighted the leadership theory and develop attributes for TL. They stated that TL has four characteristics; (1) Leader enthuses respect, esteem and faithfulness, and draws attention to the consequence of having a cooperative intellection of mission. (2) Leader always establishes face to face and individual relationships with his/her employees, and understands their contradictory expertise.(3) Leader always shows his/her group members how to attain the objective of firm, and articulates his/her principles that they can do it. (4) Leader always promotes the interest of his/her group followers and encourages employees to think in a rational and innovative way.

TL theory underlines sentiments, passion, and the magnitude of leadership oriented to motivate the creativity in their employees. Workforce is a precious resource in the organization. According to García-Morales et al. (2012); “the style of leadership that heightens consciousness of collective interest among the organization's members and helps them to achieve their collective goals.”

The resource-based view (RBV) provides a full support to the theoretical framework to assist clearly analysis of innovation and its connection with FP (Damanpour et al., 2009; Galende & de la Fuente, 2003; Mol & Birkinshaw, 2009). RBV exploits the inner uniqueness of a firm to explicate their heterogeneity in performance and strategy. Organizations with assured and special characteristics capabilities will get competitive advantages, according to the RBV theory. New innovation technology facilitates firms additional and extra capable of finding new prospects and

using offered technologies more effectively (Matzler, Abfalter, Mooradian, & Bailom, 2013). There are many definition of OI in literature and still, it is scattered and scarce (Armbruster, Bikfalvi, Kinkel, & Lay, 2008; Mol & Birkinshaw, 2009). It reflects several definitions of the notion that can be seen in table 1. However, current study applies the perfect definition, which is offered by OECD, encompass the most recent definition. OI is a process of execution of a innovative firm technique in a firm's workplace organization, business practices and external relationships (Camisón & Villar-López, 2014). OI plays a vital role in business practices and moreover, business practices introduce new methods for organization procedures and routines such as introducing management systems. Also, role of OI in workplace introduce new methods for decision making and distribution responsibilities among employees, and introducing new concepts for the division of work. Lastly, IO establishes new methods for external relationship in an organization, and introduces novel approaches of establishing relationship with other organizations such as methods for integration with suppliers.

A aptitude refers to the exploitation and redesign of resources to attain intentional objectives and to improve productivity (Makadok, 2001), according to RBV. Innovation has different intentional at the level of analysis. Innovation is studied at different levels of analysis.

Study	Terminology	Definition
Daft (1978)	Administrative innovation	Concerns organizational structure and administrative processes
Kimberly and Evanisko (1981)	Administrative innovation	Adoption of electronic data processing for a variety of internal information storage, retrieval and analytical purposes, indirectly related to the basic work activity of the hospital and more immediately related to its management
Damanpour and Evan (1984)	Administrative innovation	Innovations introduced into the organizational structure, into administrative processes and/or human resources
Damanpour et al. (1989)	Administrative innovation	Innovations in the administrative component that affect the social system of an organization
Hwang (2004)	Managerial innovation	Design of an appropriate organizational structure and processes, and a human resource system
OECD (2005)	Organizational innovation	Implementation of a new organizational method in the business practices, workplace organization or external relations
Hamel (2006)	Management innovation	A marked departure from traditional management principles, processes and practices or a departure from customary organizational forms that significantly alters the way the work of management is performed
Armbruster et al. (2006, 2008)	Organizational innovation	Changes in the structure and processes of an organization due to implementation of new managerial and working concepts and practices, such as teamwork in production, supply chain management, or quality management systems
Birkinshaw et al. (2008)	Management innovation	Invention and implementation of a management practice, process, structure or technique that is new and is intended to further organizational goals
Mol and Birkinshaw (2009)	Management innovation	Introduction of management practices that are new to the firm and intended to enhance firm performance
Battisti and Stoneman (2010)	Organizational innovation	Innovation involving new management practices, new organization, new marketing concepts and new corporate strategies
Damanpour and Aravind (2011)	Managerial innovation	New approaches in knowledge for performing management functions and new processes that produce changes in the organization's strategy, structure, administrative procedures, and systems

Figure 1: Different OI Definitions (Camisón, C., & Villar-López, A. 2014).

It refers different core new process; it can be defined as the new idea and creative thinking, where these components could introduce a innovative product and its services, organization system and production process at the organizational level (Bessant, Lamming, Noke, & Phillips, 2005; Knight, 1967). TI capabilities are directly connected more to the activities of the firm, which are likely more related to the management system (Damanpour, 1991; Zahra, Neubaum, & Huse, 2000). Technological innovation (TI) is very important factor in the development of FP. It can be divided into two categories: Process innovation and product innovation. According to many scholars (Damanpour & Gopalakrishnan, 2001; Knight, 1967; Utterback & Abernathy, 1975), process

innovation is a process in which new elements or features introduced to produce a good or render a service into a firm's production or service operation. These all features include noteworthy improvements in methodological specifications, materials and components, user friendliness, incorporated software, and other efficient characteristics as well (Manual, 2005). On the other hand, according to Damanpour (2010), product innovation is the beginning of services or products, which are latest or extensively improved and enhanced technically with respect to their functions and specifications. Process innovation changes the ways with which, the organization produces and delivers those offerings, while product innovation changes, what the organization offers to the outside world; (Bessant et al., 2005). Product innovation has a market focus and primarily customer driven. Process innovation has an internal focus, and are mainly techniques of producing and marketing goods or services (Martinez-Ros, 1999; Schilling, 2005).

TL Can use intellection stimulation and inspirational motivation to increase the innovation in a firm context, which is significant characteristics for OI (Chang & Lee, 2008). TL has also significant and positive impact for success of innovation in market (Gumusluoğlu & Ilsev, 2009). There are numerous studies (Gumusluoğlu & Ilsev, 2009; Khan, Rehman, & Fatima, 2009; Noruzy, Dalfard, Azhdari, Nazari-Shirkouhi, & Rezazadeh, 2013; Sosik, Kahai, & Avolio, 1998) that have shown positive relationship of TL with OI. Some scholars argued that TL can introduce new creative and innovative ideas into a firm for achieving specific objective and goals (Aragón-Correa, García-Morales, & Córdón-Pozo, 2007). TL encourage their employees and motivate them to perform a task which boost their motivation level into the firm (Khan et al., 2009).

OI is an instant and direct resource of competitive advantage in a marketplace (Goldman, 1995). There are many theories disclose that OI is essential and necessary for superior performance of a sector. According to marketing theories, firms that believe on speed and swiftness of innovation, get a larger market share, which produces high profitability. Most importantly, firms which have greater and creative innovation will receive a healthier response from the environment (Calantone, Cavusgil, & Zhao, 2002).

OI in workplace organization or business practices can support an additional proficient organization and the use of TI process. For instance, Damanpour and Gopalakrishnan (2001) states that business practices can endorse a boost in effectiveness such as quality control and therefore, can recover the aptitude to enlarge TI process. Furthermore, they will acquire the TI capabilities more easily that are needed more to increase FP and sustainable competitive advantage as well. There are various empirical evidence, in instance, (Prajogo and Sohal (2006)) argued that the exploit of total quality management does not straightly develop product innovation. However, OI is exploiting to develop process innovative capabilities; this will support the expansion of product innovative capabilities. Fritsch and Meschede (2001) find an empirical evidence that process and product innovation are positively correlated with each other. In addition, the growth of process innovation will allow a firm to progress its new products innovation.

Scholars are known well about the close relationship between OI and TI so far (T. Burns & Stalker, 1981; Damanpour & Evan, 1984; Fritsch & Meschede, 2001; West & Altink, 1996). But, on the other hand, there is no definite empirical confirmation exists. So, theoretical relationship has been proposed between OI and TI capabilities by Armbruster, Kirner, Lay, and Szejczewski (2007). Recently, few studies highlight the corresponding scenery of OI and TI (Battisti & Stoneman, 2010; Camisón & Villar-López, 2014; Damanpour et al., 2009), emphasizing that these two kinds of innovation makes synergism between the two types of innovation render them corresponding processes as compared to alternate processes. The current study investigates that OI is contributed the growth of TI capabilities.

In the same way, RVE theory hold that resources and capabilities are required to implement the innovation, because it makes external simulation trickier and firms gain larger organizational performance (Irwin, Hoffman, & Lamont, 1998; Lefebvre & Lefebvre, 1992). R.Walker, 2005 and R.M.Walker (2004) analyzed over than 30 research papers on OI and FP. He suggests empirically that OI is a best direction to enhanced FP. In sum, there are many studies (Aragón-Correa et al., 2007; Damanpour, 1991; García-Morales et al., 2008; Gopalakrishnan, 2000; Hage, 1999; Nam, 2007), which results show that OI has positively impact on FP.

Existing studies (Camisón & Villar-López, 2014; Damanpour & Evan, 1984; Damanpour & Schneider, 2006; García-Morales et al., 2012) find out the importance and worth of OI for TI as well as FP. They further added that there are a number of studies available in literature to support these beneficial effects among their selves. For instance, Mazzanti, Pini, and Tortia (2006) conduct quantitative study to reveal a affirmative and significant association between OI and FP. He argued more that firms with better and superior performance contribute more broadly in organizational changes. Hughes and Morgan (2007) and Zahra et al. (2000) hold that innovation as a dimension of entrepreneurship has a straight persuade on FP. So, to sum, this study proposes association between TL, OI, TI Capabilities and FP.

Hypotheses Statements

- H1: OI is positively influenced by TL.
- H2: TI capabilities are positively influenced by TL.
- H3: OI has positive relationship with TI capabilities.
- H4: OI has positive relationship with FP.
- H5: TI capabilities have a positive association with FP.
- H6: TL has an affirmative connection on FP.

Theoretical framework

The proposed model is offered in Figure 2. The model integrates TL, OI, TI capabilities and FP. TL is playing a role as an independent variable in this model, which builds relationship with mediation variable named, OI and TI capabilities. In addition, OI and TI capabilities both together build a relationship with dependent variable FP.

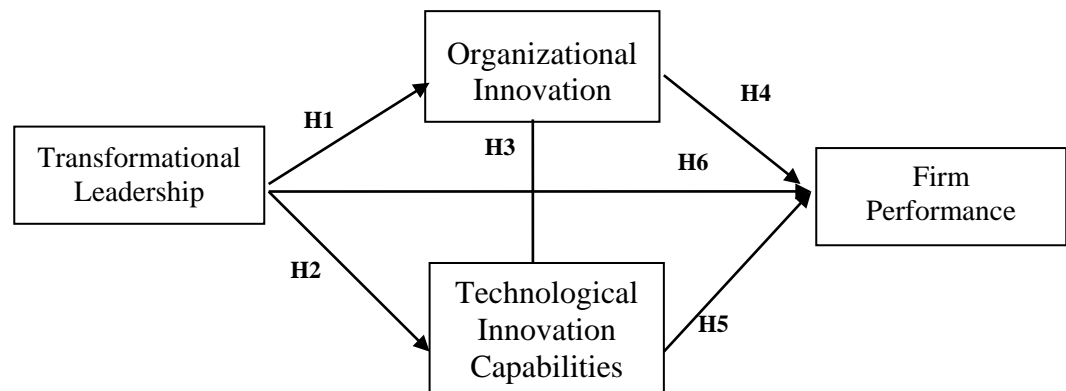


Figure 2: Theoretical Model

Methodology

Sample and Data Collection

The unit of analysis in study is individual employees working in software industry of Pakistan. The current study is performed in the software marketplace which is incredibly energetic industry in Pakistan. Software industry is playing globally a significant and key function in the trade

development. In the way, Pakistan has also attracted foreign investment and expand rapidly likewise other under developing countries (Junego, 2014). This study uses cross-sectional data collection approach in which the respondents are approached only once (Menard, 2002). Because, this technique is used to minimize the interference of researcher at the workplace. However, this method has also some restriction of imprisonment to some specific time (Weerasekera, 2014). The research used non-contrived study setting as data is collected at the actual workplace i.e. the employees working in the soft-ware industry of Pakistan.

The list is accessible at the website of Pakistan Software Houses Association (PASHA) of software houses (PASHA, 2014). A list of contact of software houses from the members' directory of PASHA is developed randomly for data collection purposes. The study used structured and close ended survey questionnaire.

The respondents were requested to read each statement carefully and select the option that best describe their response. A total of 395 survey questionnaire were collected from the software houses in Pakistan. 370 responses were completed and perfected all the ways. The data collection process took more than 3 weeks. The study received responses from respondents with diverse characteristics in terms of age, gender, income level and educational attainment.

Measurement and instruments

The instrument to measure TL is adopted from Podsakoff, MacKenzie, and Bommer (1996), used by Noruzy et al. (2013). The instrument consists of 5 items to measure all three dimensions of TL. All the statements show the perceptions of TL skills among individual respondents. The instrument is well published and used extensively by previous researches which show the authenticity of this measurement scale for instance, Noruzy et al. (2013). All items are measured in 5 point Likert scale. The mediation variables in this study are OI and TI capabilities. The instrument to measure OI is adopted from Miller and Friesen (1983) and TI capabilities from Camisón and Villar-López (2014).

The instruments contain three items and 16 items measured 5 point Likert scale where 1 for strongly disagree and 5 for strongly agree respectively. These instruments have already been used by many previous studies which confirm the authenticity of this measurement scale. Furthermore, the instrument to measured FB is adopted from Murray and Kotabe (1999). The instruments contain five items measured 5 point Likert scale where 5-point scale (1 "Much worse than my competitors," 5 "Much better than my competitors"). The questionnaire also includes measurement of respondents' characteristics including age, gender, income level and educational attainment. The objective of considering these questions is to ensure inclusion of respondents having diverse in order to generalize the findings of this study.

Table 1 show that 301 are male respondents and 69 female respondents which shows low participation by female. 44% of the respondent below 30 years of age, 32% of respondent between 32 to 44 years, 17% of respondents between 45 to 59 years, 5.6% respondent between 60 years and above.

Conversely, most of the employees in Software Company are below than 30 years. The Sample arrangements in education explain that 66.21% respondents are bachelor and 25.13% are master holder. 8.50% respondents have more than master education and other qualification. 33.24% respondent are having less than 5 years' experience, 35.13% are having 6 to 15 years' experience, 25.29% respondent are having 16 to 30 years' experience, 8.37% employees are having more than 30 years' experience. 31.35% respondents are earning USD 500 to 1500 as a monthly income, 20.17% and 13.71 of total respondents are earning USD 1600-2000 and 2100-3000 respectively. However, only 8.10% of total respondents income is more than US Dollar 3000.

The data collected through a structured questionnaire is entered in SPSS. Statistical techniques are performed for analysis the data; reliability of the data is checked through Cronbach Alpha using SPSS and confirmatory Factor analysis using AMOS is performed through AMOS for checking the validity . Correlation analysis explains the relationship between all the variables. Regression is used for test the hypothesis in this study through Structural Equation Model (SEM).

Table 1: Sample Composition

Item	Description	Frequency	Percent %
Gender	Male	301	81.35
	Female	69	18.64
	Total	370	100
Age	31 and Less	163	44.05
	32-44	120	32.43
	45-59	66	17.83
	60 and above	21	5.6
	Total	370	100
Qualification	Bachelor	245	66.21
	Master	93	25.13
	Above/other	32	8.5
	Total	370	100
Experience	Less than 5 years	123	33.24
	6-15 years	130	35.13
	16-30 years	86	25.29
	More than 30 years	31	8.37
	Total	370	100
Income / per month US Dollar	Less than USD 450	99	26.75
	500 – 1500	116	31.35
	1600 – 2000	75	20.27
	2100- 3,000	50	13.71
	More than 3000	30	8.10
	Total	370	100

Results and Discussions

Validity and Reliability Analysis

Reliability analysis is used to check the reliability of the data whether the data is reliable for analysis. For check the reliability compute the Cronbach alpha. Validity of the instrument is finding out through the confirmatory factor analysis. The factor loading value should be (0.40) according to standard criteria. The items having score below this criterion should be deleted for a good model. All the variables which are used in this study having more than 0.40 factor loading value which indicates good validity results.

Gerbing and Anderson (1992) proposed also model fitness ratios such as CFI, NFI and GFI should be approximately near to 0.90 and the value of RMSEA should be less than one. Standard model fitness require more than or near to 0.90 values of the CFI, GFI, NFI and AGFI and less than 0.80 value of RMSEA. In the footnote of the table explain the satisfy value of the GFI, AGFI, CFI, NFI, NNFI which is greater than 0.90 and some near to 0.90. RMSEA value is less than 0.80, which is acceptable.

Table 2: Reliability and Validity Analysis

Construct	Factor Loading
TL (0.91)	
“The firm’s management is always on the lookout for new opportunities for the Unit/department/organization”	0.77
“The firm’s management has a clear common view of its final aims”	0.81
“The firm’s management succeeds in motivating the rest of the company”	0.73
“The firm’s management always acts as the organization’s leading force”	0.83
“The organization has leaders who are capable of motivating and guiding their colleagues on the job”	0.92
OI (0.79)	
“The rate of introduction of new products or services into the organization has grown rapidly”	0.71
“The rate of introduction of new methods of production or delivery of services into the organization has grown rapidly”	0.80
“In comparison with its competitors the organization has become much more innovative”	0.77
TI Capabilities (0.82)	
“My firm is able to replace obsolete products”	0.74
“My firm is able to extend the range of products”	0.86
“My firm is able to develop environmentally friendly products”	0.79
“My firm is able to improve product design”	0.68
“My firm is able to reduce the time to develop a new product until its launch”	0.76
“My firm is able to create and manage a portfolio of interrelated technologies”	0.83
“My firm is able to master and absorb the basic and key technologies of business”	0.75
“My firm continually develops programs to reduce production costs”	0.69
“My firm has valuable knowledge for innovating manufacturing and technological processes”	0.89
“My firm has valuable knowledge on the best processes and systems for work organization”	0.93
“My firm organizes its production efficiently”	0.67
“My firm assigns resources to the production department efficiently”	0.69
“My firm is able to maintain a low level of stock without impairing service”	0.77
“My firm is able to offer environmentally friendly processes”	0.73
“My firm manages production organization efficiently”	0.68
“My firm is able to integrate production management activities”	0.84
FP (0.78)	
“Organizational performance measured by return on assets (economic profitability or ROA)”	0.90
“Organizational performance measured by return on equity(financial profitability or ROE)”	0.85
“Organizational performance measured by return on sales (percentage of profits over billing volume)”	0.78
“Organization's market share in its main products and market”	0.88
“Growth of sales in its main products and markets”	0.66

Note: GFI = 0.89; AGFI = 0.99; CFI = 0.91; NFI = 0.95; NNFI = 0.84; RMSEA = 0.06; RMR = 0.069

Correlation Analysis

Correlation analysis explains the relationship between all the variables. Pearson's linear correlation is performed for check the relationship and strength between the variables. Results of correlation table show that TL has a strong positive relationship with OI. TI Capabilities has a positive relationship with the TL and OI. FP is positively linked with the TL, OI and TI Capabilities. The mean and standard deviation values are according to standard criteria and show satisfactory results.

Table 3: Correlation Matrix

Variables names	TL	OI	TI Capabilities	FP
TL	-			
OI	0.90**	-		
TI Capabilities	0.81**	0.91**	-	
FP	0.90**	0.89**	0.88**	-
Mean	5.22	3.45	3.28	3.47
Standard Deviation	0.93	0.85	0.95	0.77

** Correlation is significant at the 0.01 level (2-tailed).

Decision of Hypotheses and Regression Analysis

Regression analysis technique is performed for testing the hypotheses using structural equation model (SEM). The results of Regression analysis are presented in table 4. The acceptance criterion of the hypothesis is that the value of the P should be less than 0.05. In this study, H1 is related with the OI positive influenced by TL. P value of H1 is supported the relationship. Therefore, H1 hypothesis is accepted, because their p value is less than 0.05. Also, H2 is linked with the TI capabilities are positivity influence by TL. The P value of this hypothesis is less than 0.05, so accepted this hypothesis.

In the same way, H3 states that OI has positive relationship with TI capabilities. The P value is 0.001 which is less than 0.05 and supporting hypothesis. Similarly, H4 shows that OI has positive relationship with FP. The P score is 0.03, which support the relationship between OI and FP. In the end, H5 holds that TI capabilities have a positive association with FP. P value is 0.000 which show highly significant relationship between these variables. Additionally, H6 addresses that there is a positive connection exists between TL and FP. The P value of this hypothesis is 0.004 which supports the relationship.

Table 4: Regression Results

Paths	Hyp.	Estimate	S.E	P	Decision
TL -----> OI	H1	.270	.082	.000	Supported
TL -----> TI Capabilities	H2	.336	.012	.000	Supported
OI -----> TI Capabilities	H3	.725	.017	.001	Supported
OI -----> FP	H4	.644	.015	.003	Supported
TI Capabilities -----> FP	H5	.155	.025	.000	Supported
TL -----> FP	H6	.201	.022	.004	Supported

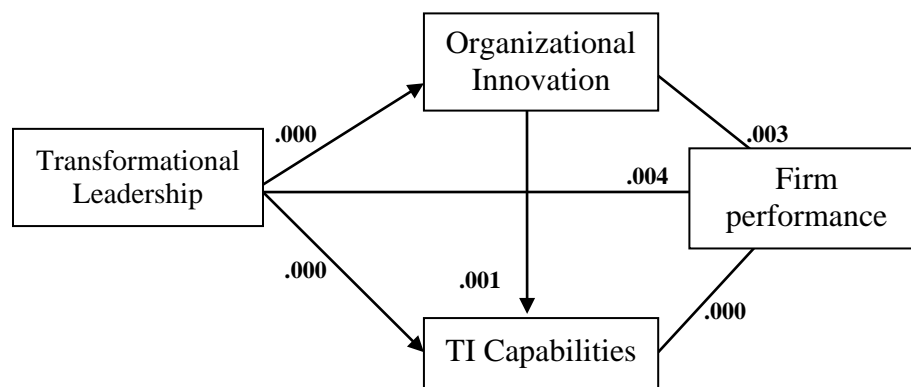


Figure 3: SEM Results

* Significant at 0.01 level.

** Significant at 0.05 level.

Managerial Implications and conclusions

The two focal aims of the current research are: (1) to investigate the relationship between TL and FP and (2) to examine the effect of TL, OI, and TI capabilities on FP. Various studies inspect knots between TL, OI and FP. Nonetheless, not many studies empirically point out the enclosure of TI capabilities in the context of TL and FP in software industry, Pakistan. Available literature on the links between TL, OI, TI capabilities and FP is still insufficient.

The outcome from results shows that TL favors the growth of OI. TL affects directly and positively the development of OI. Furthermore, relationship between TL and TI capabilities is mediated by OI. On the other hand, TL also affects direct positively the favor of TI capabilities. In addition, it is more significant directly as compared to mediation relationship. Moreover, OI also affects significantly and positively the growth of FP. Also, TI capabilities outcome supports positively the enlargement of FP. However, TL also has directly association with FP. But, it is not more supportive and significant as compared to mediation relationship through OI and TI capabilities on FP. According to findings, the information that purely implementing novel and highly developed OI and TI capabilities is sufficient for FP. Additionally, empirical data from the current study also reveals that both OI and TI capabilities affirmatively influence FP, underlining the magnitude of distinguishing between TI capabilities types. Although, TL has a direct effect and relationship with FP, the process to attain an enhancement in FP is more significant through the development of OI and TI capabilities.

This research emphasizes leaders to focus on TL at the present time in software industrial sector, where knowledge and information instantaneously becomes old-fashioned. In added, this study reveals that focusing on the TL-OI and TL-TI capabilities relationships has a strong and directly association which can enhance FP and competitive advantage. Similarly, firms' levels of OI can lead TI capabilities to enhance FP. The findings imply that TL has significant influence at organizational and individual levels. The findings of Jung et al. (2003) hold that TL has a strong and positive influence in the favor of OI at the level of organizations. In the same way, findings of present and previous studies (Gumusluoğlu & Ilsev, 2009; Noruzy et al., 2013) suggest that TL not only play a energetic role within the organization to endorse innovative movements, other than also make sure the marketplace victory of the innovations. TL positively relates to OI, TI capabilities and FP. Previous studies (Camisón & Villar-López, 2014; García-Morales et al., 2012; Gumusluoğlu &

Ilsev, 2009; Khan et al., 2009; Leal-Rodríguez, Eldridge, Roldán, Leal-Millán, & Ortega-Gutiérrez, 2015) support all hypotheses and findings of this study.

This study offers some important and significant guidelines to assist managers to understand how to boost TL, OI, TI capabilities and FP. This study offers the significance factors of TL for improving FB through OI and TI capabilities. It proposes firms to encourage TL. Because, TL has a main and central key role to generate and apply information in order to produce the critical capabilities necessary for improvement of FP. Likewise, managers should support and engage the TL for OI and TI capabilities in the firm. For the reason is that, TL makes a firm foster and innovative. In organizations, managers have to focus on developing a perspective which will be supportive to OI and TI capabilities. “Firms stand to benefit from investing in their capacity for management innovation alongside their capacity for product and process innovation” argue by Mol and Birkinshaw (2009). The results and implementations seem to sustain this idea of this paper. As a result, the mainly essential realistic implication of this study is that managers should be knower of the mutual deliberate prospective of OI and TI for reinforcing the expansion of FP through TL. TL appreciates innovative actions and motivates employees to increase the firm outcomes. Therefore, managers of an organization should memorize that TL is a magnificent variable to generate and increase the innovation in their employees and firms as well. In sum, this study recommends the managers best implications to develop innovation and FP through TL, OI and TI.

This study has also various limitations likewise other studies. A limitation of a study provides the opportunity to do further research in future. Therefore, some limitations of this study can be converted in future research. The data for this study is cross-sectional which may cause hindering assessment of the execution of variables in this study. This characteristic is of specific attention given the energetic scenery of various variables. While, the researcher is examining the most probable ways in this study model. But, only longitudinal research can review the direction of causality of the relationship and detect possible reciprocal processes.

Moreover, scholars should choose a larger sample, more than one country and in other sectors as well such as automobiles industry. However, this study also does not address the moderating role of firm size. Stoneman (1995) states that a firm size has many advantages in the context of innovative activities. Also, Bohorquez and Esteves (2008) verify the size of a firm and confirm that it moderates the relationship in small and medium Enterprise. Therefore, future study should address in this direction and it can put a significant contribution and managerial implications for firms as well.

In the end, this study proposes confirmation of causality, but cannot test causality. In addition, this research relies only on single method which is quantitative method. This study has no qualitative data and information. However, interviews with focus groups of an organization will provide a deep and superior understanding of this mechanism, proposed in this study. Mixed method can provide more reliable and validate findings for a study and obtain data with mixed method can view more complete understanding for this study. Future research should be seen in the above given phenomenon.

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