

# Total Quality Management System and Organisation Performance: Mediating Effect of Organisational Learning in Nepali Service Sector

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## Abstract

The main objective of this study was to examine the effect of total quality management system (TQM) on organisation performance along with the mediating effect of organisation learning in Nepali Service sector. The relationship between the TQM system, organisation learning and organisation performance was examined using Pearson correlation coefficient and regression analysis was conducted to test the hypotheses. Data was collected from 240 respondents (i.e., 118 from the ISO certified and 122 from non-ISO certified organisations). The findings of this study suggested that total quality management system had a significant positive effect on organisation performance and organisation learning mediated the relationship between total quality management system and organisation performance. Out of the seven dimensions of the TQM system only top management support, workforce management, customer relations, supplier quality management and process flow management had a significant positive effect on organisation performance. The results of the independent sample t-test further confirmed the high level of organisation performance in ISO certified organisations.

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## 1. Introduction and Study Objectives

In today's competitive environment organisation performance remains one of the top most priorities for organisations. Through performance organisations can achieve their strategic and financial objectives (Lee, Ooi, Tan, & Chong, 2010). In the past research organisation performance was largely neglected (Katou, 2008). Research studies evaluated organisational performance on the basis of either their financial performance (Al-Qahtani, Alshehri, & Aziz, 2015) or taking into account

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the marketing perspective by evaluating the return on investments, sales profit, growth rate and market share (Stock, Greis, & Kasarda, 2000). However, this study examined the organisation performance by taking into account a multi stakeholder's perspective, as it is important to evaluate the performance taking into account the operational performance along with the customers and the suppliers' perspective to understand the overall organisational performance (Brah, Tee, & Rao, 2002)

Successful organisations play a vital role in the social, political and economic progress and are important for any developing nation (Gavrea, Ilies, & Stegorean, 2011) and continuous organisation performance further ensures organisation success. Many studies have identified the important determinants of organisation performances such as leadership competencies, strategy, structure, quality, innovation and development (Almatrooshi, Singh, & Farouk, 2016; Gavrea et al., 2011) and total quality management (TQM) remains one of the most important factors (Mahmood, Qadeer, & Ahmad, 2015). So, to perform better the top management should focus on implementing TQM in their organisations and link it with their overall goals and objectives.

TQM is considered as the most suitable approach in bringing organisational improvement, as TQM works on the philosophy of continuous improvement (Aljaffan, 2017). The success of TQM is based on several contingent organisational factors and one such factor is "learning organisation". Senge, Kleiner, Roberts, Ross, Roth, and Smith (1999) have explained organisation learning as the capability of the individuals to learn, reflect and unlearn the old ways of doing things by discarding old ways (as cited in Mahmood et al., 2015) and is also associated with continuous improvement. Hence TQM and organisational learning both work on the concept of continuous improvement and competitive advantage. However, in today's context the term TQM has virtually disappeared but it still remains the underlying foundation for the high-performing management system and competitive success (Evans, 2005). So, the managers need to focus on the basic principles on which quality management and performance excellence are based in order to face the local and global competition (Evan, 2005)

In low-income countries like Nepal service sector plays a very important role than the agriculture and manufacturing sector, but despite this very few studies have analysed this sector in Nepal (Dahal, 2018). As compared to its South-Asian counterparts the economic performance of Nepal is still behind i.e. in 2017 the GDP of Nepal was only 24.47 billion USD as compared to that of Thailand i.e. 455.2 billion USD (United Nations, 2017). The figures highlight the decreasing demand of services in the foreign market and poor performance of the organisations within the country.

So to increase the level of quality of the products and services the organisations have started implementing ISO certification to bring standardization in their process (Biswakarma, 2017), but still there is lack of knowledge regarding how to achieve TQM and is regarded as a 'burden' or 'extra cost' for the organisations and this mindset needs to be changed (Pant, personal communication, 21st

November, 2017). The rapid increase in the registrations of ISO 9000 standard of about 343,643 certificates in 150 countries starting from the year 2000 (Heras, Casadesuas, & Dick, 2002) also highlight the desperate search of alternatives by the organisations to achieve total quality. The Government of Nepal has also implemented the certification as per Nepal Laboratory Standard and ISO 17025:2005 to improve the quality of the products and services and for gaining trust for the products and services in the domestic and international market (Ministry of Finance, 2016).

From the above discussion it becomes clear that the service sector is one of the dominating economic sectors and is playing an important role in boosting the overall economy of Nepal, however the growth of this sector is not as expected hence it becomes important to understand and take necessary steps to improve the performance of these service sector organisations in Nepal. As implementing TQM systems in organisations is found to be beneficial in boosting organisation performance (Terziovski & Samson, 1999), the performance of service sector organisations in Nepal can also be enhanced through TQM. Thus, looking at the gap regarding the usage of TQM dimensions and the current performance of the service sector organisations in Nepal the following research issue was identified in this study and is discussed below:

- How does the TQM system influence organisational performance of Nepali service organisations and what is the role of organisation learning in this relationship?
- Is there any significant difference in the level of organisation performance of the ISO certified organisations as compared to the non-ISO certified ones?

## **2. Literature Review**

### ***2.1 Organisation Performance***

Performance being one of the most recurring themes in the field of management has attracted the attention of both academicians and practicing managers. Though there are many empirical evidences available related to the improvement and management of organisational performances (Venkatraman & Ramanujam, 1986), still there is lack of consensus regarding the usage of terminology, level of analysis and conceptual basis for performance evaluation (Ford & Schellenberg, 1982). According to Richard, Devinney, Yip, and Johnson (2009) organisational performance is based on three outcomes, i.e., a) financial performance b) product market performance and c) shareholder return. Venkatraman and Ramanujam (1986) also highlighted financial, operational and organisational effectiveness as important factors for achieving business excellence. They focused on sales growth, profitability, market share, product quality, new product introduction, market effectiveness aspect and achievement of goals and objectives for evaluating the organisational performance.

According to Kaplan and Norton (2001) the success and failure of any organisation cannot be measured only by using the traditional financial measures. Cyert and March (1963) stated that in today's dynamic business environment a multi-goal-oriented approach is required to measure organisational performance (as cited in Hernaus, Skerlavaj, & Dimovski, 2008). There is a paradigm shift in the management field related to the evaluation of organisation performance and the stakeholder perspective is considered equally important (Lukviarman, 2008).

So, keeping this perspective in mind in this study organisation performance was evaluated on the basis of the organisational performance construct developed by Dimovski and Skerlavaj (2004). The organisation performance construct is based on one of the most widely used balanced scorecard approach developed by Kaplan and Norton (2001). The balance scorecard focuses on the perspective of finance, customer's, internal business, growth and learning of organisations. However instead of using the internal business process perspective the supplier's measure was considered and employees measure was examined instead of learning and growth perspective, which was successfully developed by Dimovski and Skerlavaj (2004) and was also used by Hernaus et al. (2008) in their study. Further the organisation learning dimension was replaced by supplier and employee measures to get insightful knowledge regarding the performance of organisations, as the organisation learning construct was already being examined as a mediating variable in this study.

## ***2.2 Total Quality Management System***

Total quality management is most widely implemented in organisations for effective growth, performance and is also identified as the most important antecedents of organisational performance (Mahmood et al., 2015). TQM is both philosophy and guiding principle which acts as foundation for continuous improvement in organisations (e.g., Besterfield, Besterfield- Michna, Besterfield, Besterfield-Sacre, Urdhwareshe, & Urdhwareshe, 2010). Many researchers have defined quality management as both guiding principle and management style that helps organisations in improving organisational performance and gain competitive advantage (Jaafreh & Al-Abedallat, 2013). Besides this many researchers have also claimed that TQM can be implemented in organisations varying in nature such as manufacturing, service, public and private sector (Dean & Bowen, 1994). Deming, Juran, Cosby and Feigenbaum some of the pioneers of TQM have also highlighted quality as an essential weapon for gaining competitive advantage and transforming the organisation (as cited in Jaafreh & Al-Abedallat, 2013).

Feigenbaum (1920) is regarded as the pioneer of the total quality movement and has defined quality on the basis of the customer's actual experience with the product or the service (as cited in Summers, 2005). Shewhart (1891-1967) focused on the customer wants, physical properties of the goods and services and the value received after buying the goods and services to understand quality (as cited in Summer, 2005). Demings (1900-1993) encourages top - level management involvement in the process of creating a continuous improvement

environment in organisations (as cited in Besterfield et al., 2010). Juran (1924-1941) also emphasized on creating awareness at all levels in organisation to be committed towards quality and insisted on three interrelated processes of planning, controlling and improvement also known as “Juran trilogy” (as cited in Besterfield et al., 2010). Kaoru Ishikawa studied under Deming, Juran and Feigenbaum and borrowed and adapted the concept of total quality management in Japan and is well known for the development of the cause and effect diagram. He also developed the concept of quality circle concept in Japan (as cited in Summer, 2005). Crosby further developed the “zero defect” concept whereas Taguchi believed in the philosophy of simplification and in the usage of traditional design for performing activities (as cited in Besterfield et al., 2010).

Based on the above discussions, in this study the TQM dimensions included elements such as top management support, training, workforce management, quality data reporting, customer relations, supplier quality management and process flow management. The TQM construct used in this study was based on the model developed by Dale, Wu, Zairi, Williams, and Wiele (2001). This construct of TQM dimension was used because it was based on the perspectives of TQM dimensions developed by the quality gurus such as Deming, Crosby, Feigenbaum, Juran, Ishikawa, Shingo, and Taguchi (Koc, 2011). Besides the usage of Dale et al. (2001) model the TQM construct was also based on the empirical work of Samson and Terziovski (1999) and Ahire, Golhar, and Waller (1996).

### ***2.3 Organisation Learning***

Organisation learning is the process where the organisations develop new knowledge from the experiences of employees working in the organisation further influencing organisational effectiveness and employee behaviour (Senge, 1990). Organisation learning consists of three sub-processes namely creating, retaining and transferring knowledge (Argote, 2011). Organisations learn from experiences and that further helps in creating new knowledge in the organisation (Argote, 2011). Organisation learning helps in gaining competitive advantage and improving performance by transforming the knowledge of employees into structures, systems and strategies (Slater & Narver, 1995). The continuous learning of the employees further ensures continuous improvement in organisations (Mahmood et al., 2015).

Kurt and March (1963) were the first to introduce organisation learning. They believed that by matching the efforts of organisation with the new environmental conditions often leads towards identifying new procedures with the help of which the organisations can become more effective (as cited in Saadat & Saadat, 2016). In today’s changing environment in order to survive the competition it is very important for the organisations to adapt to the changing environment. And through organisation learning the organisations can achieve this where instead of only focusing on traditional methods and behaviours the organisations can change and create a learning culture (Snyder, 1996).

In the field of modern management organisation learning is a strategic tool that can be used by the organisations to gain competitive advantage and organisational success (Mahmood et al., 2015). Despite many researches carried out in the field of management and development still there is a lack of consensus regarding the conceptualization of organisational learning and this can be due to its multidisciplinary nature, level of analysis and its application in various fields such as information processing, product innovation, organisational change, organisational culture and strategy (Crossan, Lane, & White, 1999). However according to Alvani (2008) organisation learning can be defined as, “the process of finding errors and mistakes and trying to resolve and correct them. It is the process, which happens by achieving science and improving the performance during that period of time” (as cited in Saadat & Saadat, 2016). According to Argyris and Schon (1978) to create organisation learning culture the employees need to continuously improve their work by involving into a continuous learning process in order to respond the environmental challenges both externally and internally (as cited in Kocoglu, Imamoglu, & Ince, 2011). Thus, the above discussions highlight the importance of organisation learning.

### ***2.3 Total Quality Management System (TQM) and Organisation Performance Relationship***

TQM is a well-known management philosophy that focuses on continuously improving the quality of products and services to satisfy customer needs and wants as per their requirement and also improves organisational performance (Sadikoglu & Olcay, 2014). It has been found that proper implementation of TQM practices helps organisations in gaining competitive advantage and also improves their performance (Evans, 2005). Terziovski and Samson (1999) also suggested that organisations that adopt TQM systems are found to perform better with respect to employee relations, customer satisfaction, operational performance and business performance as compared to the organisations without TQM practices. Juran (1992) also highlighted the important role of TQM practices in enhancing the organisation performance and has been established in many business practices and management research (as cited in Mahmood et al., 2015).

Besides this the applicability and universality of TQM process has been identified in different researches. For example many researchers have agreed upon the significant positive effect of TQM practices on organisational performance of service-oriented firms (e.g., Jaafreh et al., 2013; Agus, 2004; Brah, Tee, & Rao, 2002) also in the case of small and medium enterprises (e.g., Huarng & Chen, 2002; Pinho, 2008) and in manufacturing firms as well (e.g., Mahmood et al., 2015; Koc, 2011; Al-Qahtani et al., 2015; Dubey & Chakrabarty, 2011; Prajogo & Sohal, 2003; Sadikoglu & Olcay, 2014). It has also been found that TQM helps in improving the quality of management, adds customer value, increases competitiveness and helps in gaining competitive edge (Lee et al., 2010).

Though many researchers have identified a significant and positive relationship between TQM practices and organisation performance some studies fail to identify this relationship and have found a positive but non-significant relationship between TQM practices and organisational performance (e.g., Hendricks & Singhal, 1997, Lemak, Reed & Satish, 1997) and the reason can be due to the differences in the industry type or organisation size (Terziovski & Samson, 1999) and also due to the differences in usage of different TQM dimensions, different performance measures and contextual differences (Sadikoglu & Olcay, 2014). This further highlights the lack of consensus and demands the need for investigating the relationship between TQM system and organisation performance. Besides this in most of the studies the researchers have examined the relationship between TQM practices and organisation performance by taking into account only the financial aspect (Mahmood et al., 2015) further highlighting the need to take into account the multiple stakeholder's perspective while evaluating organisational performance. The top management commitment, communication, planning, interaction and leadership role were found to have a positive impact on organisation performance (Samson & Terziovski, 1999; Sun, 2000; Wilson & Collier, 2000; Brah et al., 2002; Lee et al., 2003; Prajogo & Sohal, 2003). It was also found that focusing on customer requirements, using customer oriented strategies, maintaining customer relationships along with the effective use of human resources; maintaining quality system with the suppliers by periodically reviewing their work and feedbacks improved organisational performance (Agus & Abdullah; Brah et al., 2002; Samson & Terziovski; Prajogo & Sohal, 2004; Agus, 2004; Seth & Tripathi, 2005; Brah & Lim, 2006). However, in Nepali organisational context the relationship between TQM system and organisation performance still remains unexplored (Thapa, 2011; Kothari, Shrimali, & Pradhan, 2017) further creating the need for this study. Thus, on the basis of the above discussion it is hypothesized that:

H<sub>1a</sub>: There is a significant positive effect of total quality management system on organisation performance of service organisations.

H<sub>1b</sub>: There is a significant positive effect of top management support of total quality management systems on the performance of organisations.

H<sub>1c</sub>: There is a significant positive effect of training of total quality management systems on the performance of organisations.

H<sub>1d</sub>: There is a significant positive effect of workforce management of the total quality management system on the performance of organisations.

H<sub>1e</sub>: There is a significant positive effect of quality data reporting of total quality management systems on the performance of organisations.

H<sub>1f</sub>: There is a significant positive effect of customer relations of the total quality management system on the performance of organisations.

H<sub>1g</sub>: There is a significant positive effect of supplier quality management of total quality management systems on the performance of organisations.

H<sub>1h</sub>: There is a significant positive effect of process flow management of total quality management systems on the performance of organisations.

### ***2.4 TQM System and Organisation Learning Relationship***

The importance of TQM and its positive relationship with improved productivity and reduced costs is a well-known fact (Lee & Lee, 2015) but despite this only a few empirical evidences are available related to the relationship between TQM and organisational learning (Kocoglu et al., 2011). Sisnuhadi and Nasir (2013) in their study confirmed the mediating role of organisation learning in the relationship between quality management practices and organisational performance. Successful implementation of TQM in organisations promotes learning and thus creating a culture of sharing and transfer of knowledge. The employees promote organisation learning with the support of top management and further initiate TQM practices in organisation (Hung, Lien, Yang, Wu, & Kuo (2011). This has further made some researchers believe that organisation learning is a possible and expected outcome of TQM (e.g., Yusr, Mokhtar, & Othman, 2013; Kocoglu et al., 2011).

Besides this many researchers have investigated the role and importance of TQM in enhancing organisational learning. For example, studies conducted by Yusr et al. (2013) and Akgun, Ince, Imamgolu, Keskin, and Kocoglu, (2014) have identified the significant and positive relationship between TQM and organisational learning. Iyer, Saranga, and Seshadri (2013) also proposed that successful implementation of core practices of TQM induce learning resulting in improved productivity and quality. According to Hung et al. (2011) TQM helps in creating a culture of trust in organisation and motivation in employees to learn. TQM also promotes a culture of learning in organisations and promotes employee participation (for e.g. Love, Li, Irani, & Faniran, 2000; Martinez – Costa and Jimenez – Jimenez, 2008; Lam, Lee, Ooi, & Lin, 2011). Thus, on the basis of the above discussion it is hypothesized that:

H<sub>2</sub>: There is a significant positive effect of the total quality management system on organisation learning.

### ***2.5 Organisational Learning and Organisation Performance***

Organisation learning creates a culture of learning in organisation, which further helps in improving the individual performance and organisation performance (Kropp, Lindsay, & Shoham, 2006). Many researchers have identified the positive relationship between organisational learning and organisation performance (e.g., Mahmood et al., 2015; Argote, 2011; Saadat & Saadat, 2016; Hussein, Mohamad, Noordin, & Ishak, 2014; Snyder, 1996; Hernaus et al., 2008); Kocoglu et al., 2011; Ratna, Khanna, Jogishwar, Khattar, & Agarwal, 2014). Some researchers have identified a positive and direct relationship between organisational learning and organisation performance (e.g., Baker & Sinkula, 1999; Tippins & Sohi, 2003), whereas some researchers have identified the important role of TQM, innovation and organisational knowledge as mediators in the relationship between organisation learning and organisational performance (e.g., Hussein et al., 2014; Kocoglu et al., 2011; Snyder, 1996).



Besides organisation performance, learning also acts as a basis in gaining competitive advantage, which further enhances the performance of an organisation (Martinez-Costa & Jimenez – Jimenez, 2008). Also, organisations that implement strategies that promote learning in organisation are found to achieve a high level of performance (Ellinger, Ellinger, Yang, & Howton, 2003). Organisation learning also facilitates learning in organisation further leading to innovation and enhanced organisation performance (Baker & Sinkula, 1999). Thus, on the basis of above empirical evidences it is hypothesized that:

H<sub>3</sub>: There is a significant positive effect of organisational learning on organisation performance.

### ***2.6 Organisation Learning as a Mediator***

The mediating role of organisation learning on TQM systems and organisation performance relationship has been examined by only few researchers (Mahmood et al., 2015). The mediating role of organisation learning was identified in the study conducted by Hung, Lien, Yang, Wu, and Kuo (2011) where organisation learning mediated the TQM and innovation performance relationship. Besides this, the mediating effect of organisation learning was identified with different variables under study for example Raj and Srivastava (2013) identified the mediating effect of organisation learning in the relationship between organisation culture, HRM practices and innovativeness. Siavashpouri, Hosseingolizadeh, and Maharati (2015) also identified the mediating effect of organisation learning and knowledge integration in the relationship between knowledge characteristics and organisational innovation. Thus it is hypothesised that:

H<sub>4</sub>: Organisational learning mediates the relationship between total quality management system and organisation performance.

### ***2.7 Comparison of the Organisation Performance on the Basis of Certification (ISO certified and Non-ISO Certified)***

Researches have highlighted that TQM takes place in organisations where the formal tools such as ISO certification has been implemented (Evans, 2005). Further comparing the ISO with Non-ISO certified organisations the results indicated that the performance of the ISO certified organisations was high in terms of their return on assets (ROA), return on equity (ROE), working capital (WC), return on sales (ROS), economic value added (EVA) (Mokhtar & Muda, 2012). In another study conducted in Tehran by Forough and Valmohammadi (2015) also revealed the fact that the hospitals and health centres with ISO 9001 certifications outperformed the non-certified one's with regards to employee's operation, quality design, responding to customers and customer satisfaction further highlighting the importance of ISO 9001 certification. Many researchers found that ISO certified companies outperformed the Non-ISO certified companies in terms of their organisation performance (for e.g. Gupta, 2000; Heras et al.,

2002; Siougle, Economidou, Drivas; Dimelis, 2018; Priyanka, Anil, and Satish, 2016). Thus, it is hypothesized that:

H<sub>5</sub>: There is a significant difference in the performance of organisations in ISO certified organisations as compared to the Non-ISO certified organisation

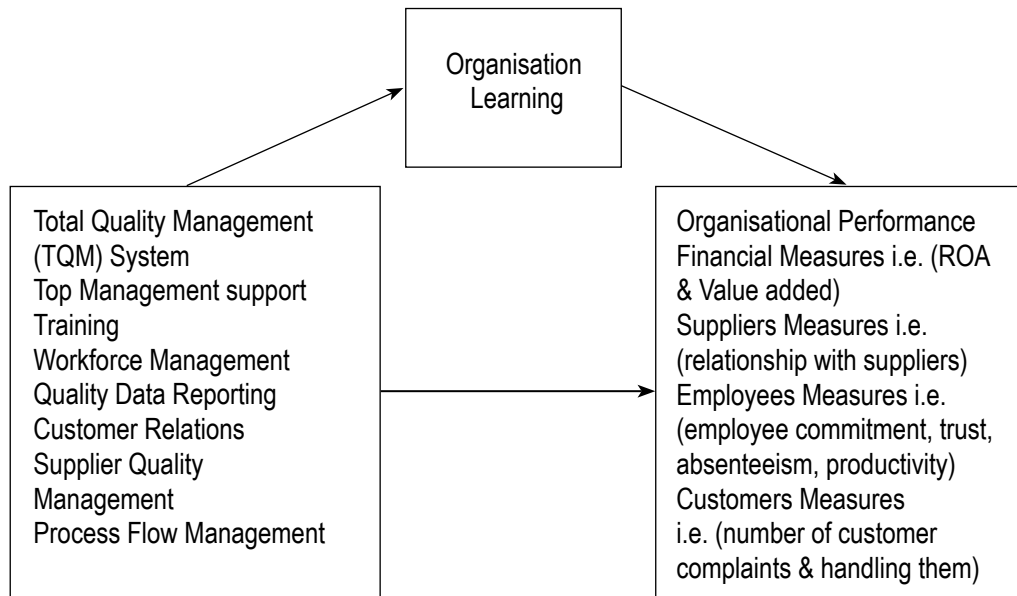


Figure 1. *Conceptual Framework (Dale, Wu, Zairi, Williams & Wiere, 2001)*

### 3. Research Methods

#### ***3.1 Population Sampling and Administration of Questionnaire***

The population sample of this study included 118 ISO certified and 122 Non-ISO certified service sector organisations. These organisations were selected using a convenience sampling method. The sample population included service rendering organisations such as the Internet Service Providers, IT consulting firms, software companies, banks, hotels, hospitals, polyclinics, human resource consultancies and energy/solar companies. The unit of analysis for this study was at organisational level. The questionnaire was administered to the leaders of the organisation. Out of 400 questionnaires that were distributed the total responses obtained were 277 (69.25%) and after scrutinizing the responses the final sample size comprised 240 (60%) responses that were found to be valid and were further analysed in this study.

#### ***3.2 Instruments***

In this study total quality management (TQM) was measured using a model developed by Dale et al., (2001). The TQM dimensions included top management support, training, customer relationship management, supplier relationship

management, workforce management and process flow management. The responses for TQM dimensions were captured using a 5- point Likert scale. Altogether there were 27 items under the TQM system. The Cronbach alpha of this scale ranged between 0.73 to 0.81 (Koc, 2011) further indicating the reliability of this scale. Organisation Learning Scale: To measure organisational learning in this study 9-item scale was used. In this study organisation learning was based on two dimensions i.e. learning culture and learning strategy. This scale was previously used by Hung et al. (2011) in their study and the Cronbach alpha of this scale ranged between 0.84 - 0.85. The response for organisational learning was captured using a 5- point Likert scale. The five items in this scale captured the learning culture dimension and the remaining four items captured the learning strategy dimension

Organisation Performance: To measure organisational performance a 19- item scale developed by Dimovski and Skerlavaj (2004). In this scale organisational performance was measured by focusing on four perspectives i.e. the financial measure, employees measure, suppliers measure and customers measure. The Cronbach alpha value for this scale was found to 0.90, which further ensured the reliability of this scale (Hernaus et al., 2008). The responses were captured using a 5- point Likert scale with anchors 1= strongly to 5= strongly agree.

### ***3.3 Research Procedure and Data Analysis***

Altogether 240 responses were found valid and further analysed using SPSS version 21. The reliability analysis of each instrument was also examined and the Cronbach alpha value for total quality management system (TQM) was found to be 0.96, for organisation learning the alpha consistency was 0.95 and the Cronbach alpha value for organisation performance was found to be 0.94 respectively. The data consisted of consultancies and IT companies (25.8%), bank/ Insurance contributed (17.1%), Hospitals/Pathlabs comprised of (15.4%) and the hotels, logistic companies, solar/energy companies and different service rendering companies comprised of (15.8%). The data also presented that 118 organisations were ISO certified (49.2%), whereas 122 organisations were non-ISO certified (50.8%) from the total number of organisations (n=240) in the given sample. Along with this the information about the type of organisation was also collected as a dummy variable (1= ISO certified; 0 = Non – ISO certified) and further analysed in this study. The overall mean score of all the items was also calculated and out of which the mean score of organisation learning was the highest i.e. 3.65 (S.D. = 0.75) as compared to other items indicating that organisation learning was considered as an important variable by the top-level management in Nepali context. Similarly, the mean score of total quality management process (TQM) had the mean score 3.53 (S.D. = 0.62) and for organisation performance the mean score was 3.53 (S.D. = 0.54) respectively. To further test the hypotheses, a regression analysis was conducted along with Barron and Kenny's mediation model. Finally, to compare the differences in the level of organisation performances T-test was administered.

#### 4. Data Analysis and Discussions

To examine the nature and strength of relationship between the study variables (i.e. TQM system, organisation learning & organisation performance) correlations coefficient was calculated using Pearson correlation matrix. The correlation matrix in Table 1 indicated that there was a significant positive correlation ( $P < 0.01$ ) between total quality management system (TQM), organisational learning and organisation performance. The Cronbach alpha value for total quality management system (TQM) was found to be 0.96, for organisation learning the alpha consistency was 0.95 and the Cronbach alpha value for organisation performance was found to be 0.94 respectively. As per the rule of thumb the alpha value should be higher than 0.70 further indicating the reliability of the scale used in this study. Details of intercorrelation among study variables along with correlation and their mean and standard deviation values are discussed in Table 1 given below:

Table 1

*Mean, Standard Deviation, Cronbach Alpha Value and Intercorrelations of Study Variables*

	Mean	SD	$\alpha$ Value	1	2	3	4	5	6	7	8
1 Top Management	3.55	0.71	0.85	1							
2 Training	3.40	0.89	0.91	0.76**	1						
3 Workforce Management	3.55	0.72	0.86	0.71**	0.73**	1					
4 Quality Data Reporting	3.61	0.71	0.80	0.66**	0.62**	0.72**	1				
5 Customer Relations	3.60	0.65	0.86	0.67**	0.65**	0.76**	0.72**	1			
6 Supplier Quality Management	3.39	0.76	0.89	0.69**	0.82**	0.73**	0.62**	0.68**	1		
7 Process Flow Management	3.63	0.64	0.84	0.65**	0.65**	0.67**	0.66**	0.71**	0.68**	1	
8 Organisation Performance	3.65	0.75	0.94	0.76**	0.74**	0.79**	0.70**	0.76**	0.81**	0.73**	1
9 Organisation Learning	3.53	0.54	0.95	0.70**	0.79**	0.73**	0.64**	0.72**	0.79**	0.74**	0.830**

Notes: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Note: From Calculations based on Survey, 2018

Further the results of regression analysis in Table 2 indicated a significant positive relationship between the TQM system and organisation performance (standardised  $\beta = 0.885$ ,  $R^2 = 0.78$ ,  $p < 0.01$ ) and organisation learning (standardised  $\beta = 0.858$ ,  $R^2 = 0.73$ ,  $p < 0.01$ ), further accepting hypotheses 1, 2 and 3.

Table 2.

*Regression Estimates*

<i>Model</i>	<i><math>\beta</math> (Standardised)</i>	<i>R<sup>2</sup></i>	<i>F</i>	<i>Remarks</i>
TQM → OP	0.885***	0.78	861.281	H <sub>1</sub> accepted
Top management Support → OP	0.217***	0.79	131.828	H <sub>1a</sub> accepted
Training → OP	-.087	0.79	131.828	H <sub>1b</sub> rejected
Workforce Management → OP	0.180**	0.79	131.828	H <sub>1c</sub> accepted
Quality Data Reporting → OP	0.066	0.79	131.828	H <sub>1d</sub> rejected
Customer Relations → OP	0.146*	0.79	131.828	H <sub>1e</sub> accepted
Supplier Management → OP	0.377***	0.79	131.828	H <sub>1f</sub> accepted
Process Flow Management → OP	0.123**	0.79	131.828	H <sub>1g</sub> accepted
TQM → OL	0.858***	0.736	664.679	H <sub>2</sub> accepted
OL → OP	0.830***	0.688	525.3	H <sub>3</sub> accepted

*Notes: \*p < 0.10, \*\*p < 0.05, \*\*\*p < 0.01; TQM, total quality management system; OP, organisation performance; OL, organisation learning*

*Note: From Calculations based on Survey, 2018*

To test the mediating effect of organisation learning Barron and Kenny's (1986) model for mediation was conducted. Positive significant effect of total quality management system on organisation performance was identified (standardised beta coefficient = 0.885\*\*\*) along with organisation learning (0.858\*\*\*) as discussed in Table 2. However, when total quality management system variable was controlled the effect of organisation learning on organisation performance was also found significantly positive (standardised beta coefficient = 0.266\*\*\*) but the effect was significant further indicating that partial mediating effect of organisation learning on organisational performance. As it can be seen in Table 3 that after introducing organisational learning in the model the effect of total quality management system on organisation performance is reduced to 0.657\*\*\* (standardised beta coefficient) from (standardised beta coefficient = 0.885\*\*\*) further confirming the partial mediating effect of organisation learning on the relationship between total quality management system and organisation performance and thus supporting hypotheses 4 of this study.

Table 3

*Indirect Effect of Organisation Learning on Organisation Performance*

<i>Predictors</i>	<i>Standardised Beta Coefficient</i>	<i>Unstandardized Beta Coefficient</i>
TQM	0.657***	0.572***
Organisation Learning	0.266***	0.193***
F	480.264	
R <sup>2</sup>	0.802	
Adjusted R <sup>2</sup>	0.800	

*Notes: \*p<0.10, p\*\* <0.05, p\*\*\*<0.01, Organisation Performance-Dependent Variable; TQM-Total Quality Management System*

*Note: From Calculations based on Survey, 2018*

*Mean Differences between Groups (ISO Certified and Non-ISO Certified)*

To test the hypotheses 5 of this study independent sample t-test was carried out. The results given in the Table 4 indicated that there was mean difference in the organisation performance of ISO certified organisations which is found to be 3.97 as compared to the Non-ISO certified organisations which is 3.11 further confirming that ISO certified organisations have high organisation performance and is found to be highly significant at  $p<0.01$  further supporting hypotheses 5 of this study.

Table 4

*Mean Differences in Organisation performance and Organisation Learning in ISO Certified and Non-ISO Certified Organisations*

	<i>Organisation Type</i>	<i>N</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Std. Error Mean</i>	<i>F</i>	<i>Sig (2-tailed)</i>
Organisation Performance	ISO	118	3.9723	.29818	.02745	8.420	.000
	Non-ISO	122	3.1186	.36861	.03337		

*Notes: From Calculations based on Survey, 2018*

The significant positive effect of TQM system on organisation performance in this study was in line with the previous studies (e.g., Sadikoglu & Olcay, 2013; Terziovski & Samson, 1999; Mahmood et al., 2015; Jaafreh et al., 2013; Agus, 2004; Brah, Tee, & Rao, 2002) further confirming that TQM system implementation in organisations further improved their overall performance. Examining the seven dimensions of TQM only five dimensions i.e. top management support, workforce management, customer relations, supplier quality management and process flow management showed a significant positive effect on organisation performance further confirming that in Nepali ISO certified organisations top leaders of the organisation played an active role in supporting activities that boosted the

performance of organisations. It has been found that with top management support the performance of the organisations can be improved at all levels (e.g., Pham, Pham, & Pham, 2016; Jitpaiboon & Kalaiyan, 2005). Workforce management was also found to have a significant effect on organisation performance in this study further indicating that the competent employees were involved at all levels and by empowering and engaging them the overall quality objective was achieved further leading towards the enhancement of the organisation performance (service sector).

According to ISO policy guidelines, the primary focus of quality management is to meet the customer's requirements and exceed their expectations (International Organisation for Standardization, 2015) and the positive effect of customer focus on organisation performance indicated that service sector organisations in Nepal were able to attract and retain their customers confidence, loyalty and satisfaction. Supplier quality management was also found to have a significant effect on organisation performance and was in line with previously conducted studies (for e.g., Chibba, 2017; Forker, 1997; Samson, Muli, Ruth, & Tabby, 2013; Ali & Mimeche, 2014). Along with this process flow management was also found to have a significant effect on organisation performance and supported the previous studies (e.g., Janine, Jones, & Linderman, 2014; Ahire & Dreyfus, 2000).

However, training and quality data reporting were not found to have any significant effect on organisation performance further indicating that the organisations somewhere lacked in providing appropriate training as per the needs of its employees or failed in evaluating the training effectiveness through employee feedback. In today's competitive environment in order to gain competitive advantage the employees need to be competent and that can be achieved through training and development and the organisations need to invest in the training process (Engetou, 2017). Organisations in Nepal somewhere are lacking in managing and reporting the data related to quality and has influenced their level of performance and the organisations need to focus more on their documentations and quality data reporting if they want to succeed in the long run.

Besides this the significant positive effect of TQM system on organisation learning was also identified further supporting the earlier studies (e.g., Love, Li, Irani, & Faniran, 2000; Yusr, Mokhtar, & Othman, 2013; Kocoglu et al., 2011). The study results also supported the positive effect of organisation learning on organisation performance further contributing positively to the available literature (e.g., Mahmood et al., 2015; Argote, 2011; Saadat & Saadat, 2016; Hussein, Mohamad, Noordin, & Ishak, 2014). The mediating effect of organisation learning on TQM system and organisation performance was also identified and supported the previous studies (Yusr et al., 2013; Garcia-Morales, Llorens-Montes, & Verdu-Jover, 2006).

Lastly this study also highlighted that there was a significant difference in the level of performance the level of organisation performance in ISO certified organisations as compared to the Non-ISO certified organisations further highlighting the important role of implementing TQM system in organisations and further contributing positively to the available literature (e.g., Mokhtar & Muda, 2012; Forough & Valmohammadi, 2015; Siougle et al., 2018 Priyanka et al., 2016).

## **5. Conclusion and Implications**

The important role of total quality management system responsible for creating an environment of organisation learning and enhancing organisation performance was identified in this study. The significant positive results confirm that TQM has played a very important role in enhancing the performance of organisations in Nepali service sector. The role of TQM in creating a culture of organisation learning has been highlighted in this study along with the need for ISO certifications. Thus, the organisations should focus on implementing quality practices in order to achieve TQM and create learning culture in organisations for long term success and sustainability.

As this study intended to examine the effect of TQM system on organisation performance along with the mediating role of organisation learning, the study findings were beneficial in identifying the important role of TQM system along with organisation learning and organisation performances, as this domain still remains unexplored in the Nepali organisational context. As this study was conducted in the service sector domain the positive results further filled the gap by identifying the TQM system dimensions applicable in Nepali service rendering organisations. The practitioners/top-level management can apply the knowledge of the TQM system into practice along with organisation learning to gain the long-term benefits by improving their financial performance and relationship with their employees, suppliers and customers.

From the research point of view this study also contributed positively towards the existing body of knowledge, as there are only few available literature works related to these variables in Nepali context. The reliability, validity and the applicability of the measurement scales developed in the western context were also confirmed in this study. This research followed a quantitative approach but using a mixed approach (i.e. quantitative and qualitative) would have helped generate a better understanding of the perception of employees, suppliers and customers. Besides this the study only focused on the service sector organisations and further research can be conducted by including the manufacturing sector to compare the differences in their level of organisation performance.

Some other limitations of this study were the usage of convenient sampling technique, small sample size, selection of participants and use of self-report bias that may restrict the validity and generalisability of the study findings. This



study was cross-sectional in nature, so the causal relationship between the study variables couldn't be established. This study was conducted by taking only the organisational leader's perspective, however including the different stakeholders such as the employees, customers and the suppliers would have added value to analyse the research issue from a multi-stakeholder perspective.

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### ***Conflict of interest***

The author claims that she has no conflict of interest in the research work.

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