



Elaborating on the links between declarative knowledge, procedural knowledge, and employee performance

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Abstract

The purpose of this study is to elucidate the links between declarative knowledge, procedural knowledge, and performance in the context of ISO 9001:2015 certification. It develops a model which tests the impact of training and rewarding on employees' declarative knowledge, procedural knowledge, and motivation. It tests the effects of declarative knowledge, procedural knowledge, and motivation on employees' contextual and task performance. The study is conducted in Turkey using data collected from 423 employees working in various firms operating in the textiles, food production, and mining sectors. Our results show that although training and rewarding are important antecedents of knowledge and motivation, ISO 9001:2015 certified firms had difficulties in converting these benefits into better employee performance.

Keywords Declarative knowledge · Procedural knowledge · Knowledge · ISO 9001 · ISO 9001:2015 · Turkey

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Introduction

Knowledge and its varieties have long been the subject of high-quality studies in the cognitive domain (Ryle 1949; Polanyi 1966; Anderson 1983; Bechtel and Abrahamsen 1991; Squire 1992; Sorensen and Levold 1992; Mathews and Roussel 1997; Dienes and Perner 1999; Gorman 2002). However, when existing research in management is examined, it is seen that the subject of knowledge management has been dealt with more at the organizational level (Roos et al. 1997; O’Leary 1998; Martensson 2000, Chase 2000; Faucher et al. 2008; Nieves et al. 2016; Wipawayangkool and Teng 2016; Demir et al. 2022), and literature needs more work on knowledge management at the employee level. Therefore, the initial purpose of this study is discussing and broadening the antecedents and consequences of knowledge in the declarative and procedural phases at the individual level and investigating their impact on contextual and task performance.

The number of firms that obtain ISO 9001 quality management system certification has been increasing across the world every year. Efficiency in implementing the principles of the certification is a question mark though. Demir (2021) found that the number of the firms being certified in the developed countries had started reducing by 2008 while it continued increasing in developing countries. One possible reason for this cited by Demir is the ISO 9001 certification’s weak impact on operations due to incompetent implementation in the main principles of the certification. His study also showed that in some cases, the ISO 9001 certification negatively affected a firm’s business performance. As a solution, the study suggested that education and experience are vital instruments in increasing the efficiency of the certification. As can be seen from these findings, knowledge management at the individual level is related to employees’ training and deliberate practices.

The ISO 9001:2015 version put forward knowledge management at the individual and organizational levels. Clause 7.1.6. of the ISO 9001:2015 certification requires certified firms to determine the knowledge necessary for the operations of their processes and achieving conformity in products and services (Demir et al. 2022). However, the certification identifies knowledge in various forms such as tacit knowledge, explicit knowledge, declarative knowledge, and procedural knowledge (ISO Consultant in Kuwait 2020). Hence, researchers and practitioners need to investigate how efficiently knowledge dynamics are used in the certified firms. Besides, there is no study which elaborates on the declarative and procedural knowledge’s efficiency in ISO 9001 certified firms. As these knowledge forms are vital for employees’ performance, research is needed to empirically investigate the real practices in the market. In this regard, a second objective of the current study is evaluating the links between employees’ declarative and procedural knowledge with rewarding, training, motivation, and performance improvement in the context of the ISO 9001:2015 certification.

The rest of the study is organized as follows. Section 2 describes the theoretical background and reviews existing research in the field. Section 3 explains the

methodology used in the study. In Sect. 4, the hypothesized model is tested, and the results of the hypotheses are reported. The findings are discussed and compared with existing studies in Sect. 5. Section 6 gives the conclusion and some suggestions for practitioners and Sect. 7 gives the limitations of the study and provides suggestions for future research.

Theoretical background

Overall understanding of knowledge

Knowledge is an important value using which one can relate to realities, define them, and show an attitude toward similar situations because of this acquisition (Zagzebski 2017). There are mainly two types of knowledge—tacit and explicit (Nickols 2013). According to Polanyi (1997), tacit knowledge is not articulated. According to him, humans know more than what they declare. Explicit knowledge is derived from implicit (tacit) knowledge (Dienes and Perner 1999). On the other hand, cognitive sciences divide knowledge into declarative and procedural types (Anderson 1995). Declarative knowledge is in theoretical form and explains the methods and procedures of things while procedural knowledge is converted into practical skills (Nickols 2013; Anderson 1995).

Additionally, Davenport and Prusak (1998, p.5) define knowledge as ‘it is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms.’ From the discussion so far, it can be concluded that there is a strong relation between tacit–explicit knowledge and declarative–procedural knowledge (Nickols 2013).

For example, tacit knowledge can be declarative or procedural. An employee might know how a job can be completed (known as tacit–declarative knowledge). This becomes tacit–procedural knowledge in case the same employee converts tacit–declarative knowledge into his/her skills. Furthermore, all the processes, procedures, instructions, and documentations of an organization might be well defined, but this is just an explicit–declarative form of knowledge if these documents are not converted into practice and made an organizational culture. If the organization uses and follows these documents properly and consistently, it is called explicit–procedural knowledge (Gorman 2002). However, Balzano (2022) claimed that although employee knowledge is very important for organizations, knowledge not necessarily extracted out in an intended way may be learned unintendedly as well.

In our study, tacit knowledge is the backbone of the hypothesized model framework. However, we considered individual (tacit) knowledge types in the declarative and procedural forms.

Declarative knowledge

Declarative knowledge refers to an individual's understanding and intentions, which are very important for problem solving and decision making (Alves 2005). According to Alves, training in line with the required tasks has a crucial role to play in a person's declarative knowledge. Similarly, Kump et al. (2015) relate declarative knowledge to cognition. They also note that a person's awareness depends on external stimuli, which may be ambient social interactions. Hong et al. (2018) describe declarative knowledge as 'know what,' and procedural knowledge as 'know how.' Declarative knowledge relates to learning and recalling, while procedural knowledge refers to proactive abilities to convert passive knowledge to practical knowledge (Hong et al. 2018). Hence, it can be said that to know how, initially we need to know what. Hence, it can be further said that declarative knowledge is vital for procedural knowledge.

One needs to 'know what,' or job descriptions, authorities, and objectives before he/she implements his/her skills and capabilities. Szymanski (1988) suggests that a salesperson's declarative knowledge is significantly important for how he/she sells a product. Hence, declarative knowledge is a vital determinant of procedural knowledge. Declarative knowledge mediates between training and procedural knowledge. Szymanski adds that beside knowledge, employee motivation also plays an important role in sales performance. Hence, it is suggested that declarative knowledge affects employee motivation and mediates in the relationship between antecedents and motivation. When employees are given good training by the organizations and they learn how to perform better, it might motivate them to meet the requirements of their jobs and achieve their goals. This kind of knowledge acquirement might also increase employees' commitment to their employers.

ISO 9001 Clause 7.1.6 requires 'The organization shall determine the knowledge necessary for the operation of its processes and to achieve conformity of products and services. This knowledge shall be maintained and be made available to the extent necessary. When addressing changing needs and trends, the organization shall consider its current knowledge and determine how to acquire or access any necessary additional knowledge and required updates' (ISO Consultant in Kuwait 2020). This clause requires ISO 9001 certified firms to work on their staff members' procedural and declarative knowledge as well as on their organizational knowledge to boost their performances (Demir et al. 2022). Thus, ISO 9001 certified firms are expected to organize special training and deliberate practice programs for staff members which will impact employees' declarative and procedural knowledge; this is expected to be positive. Moreover, as long as the experience of ISO 9001 certification accumulates the impact, employees' performance is expected to be more positive. However, there is no empirical evidence that tests the efficiency of training programs for staff members' declarative and procedural knowledge in ISO 9001 certified firms. Hence, this study elaborates on the impact of training programs on employees' knowledge along with their experience and for comparing them with non-certified firms. The following hypotheses regarding declarative knowledge and ISO 9001 certifications effects on employees' declarative knowledge were developed:

H3a Declarative knowledge significantly affects employees' procedural knowledge.

H3b Declarative knowledge significantly affects employees' motivation.

H3c Declarative knowledge significantly affects employees' contextual performance.

H3d Declarative knowledge significantly affects employees' task performance.

H3e ISO 9001 certified firms are performing better in developing declarative knowledge of employees than non-certified firms.

Procedural knowledge

While knowing what and when to act represent declarative knowledge, being aware of how to perform the tasks and having skills and abilities for performing them represent employees' procedural knowledge (Aguinis 2009). Aguinis adds that the success of procedural knowledge depends on a suitable combination of declarative and procedural knowledge, whereas motor, interpersonal, and physical skills (procedural knowledge) can be used when one has enough information, principals, and procedures (declarative knowledge) about the requirements of an organization. As Alves (2005) notes, environmental factors provide an individual with the required stimuli to have declarative and procedural knowledge that in turn can be converted into performance at the workplace.

Based on the social learning theory, a learning process can be improved through observations and imitations of contextual factors (Bandura 1978). Additionally, training and rewarding systems are other variables that have a positive impact on individual knowledge, and performance processes (Jaques et al. 2019; Rucker 2017). Aguinis (2009, p.91) maintains that lack of performance in an organization depends on employees' motivation and their procedural knowledge. Employees could have the required knowledge but may not have the skills or circumstances to convert these skills into performance. For improving employees' performance, Aguinis (2009) suggests deliberate practices so that employees' procedural knowledge increases which, in turn, will affect employees' motivation and performance. In this regard, deliberate practices require special training for employees for increasing their specific skills, abilities, and capabilities. Matsuo and Yoshino (1996) found that procedural knowledge was one of the guiding principles which shaped employees' behavior toward customers. Hence, it can be said that procedural knowledge motivates employees for adopting better behavior and performance. Matsuo and Kusumi (2002) add that employees' procedural knowledge boosts their performance. Aguinis (2009) claims that without declarative knowledge, procedural knowledge, and motivation, employees do not perform properly. From the derivation of these claims, it can be seen that the relations among declarative knowledge, procedural knowledge, and motivation need to be studied more. Aguinis (2009) claims that motivation is a mediator between knowledge and performance. Scholars further add that without motivation, neither declarative knowledge nor procedural knowledge will drive the employees to perform better. Hence, it can be said that declarative and

procedural knowledge mediate between antecedents and employees' motivation and/or performance.

Clause 6.2.1 of ISO 9001:2015 states 'The organization shall establish quality objectives at relevant functions, levels and processes' (ISOQAR Africa 2019). This clause has several dimensions. Initially the dimensions require communicating the job description and the objectives to the employees, which is the 'what' aspect of knowledge. Knowing what to do requires knowing how to do it. Therefore, another aspect of the clause is the 'how' of knowledge. In addition, knowing how to achieve an objective requires procedural knowledge. In this regard, ISO certified firms are expected to communicate quality objectives to their employees at relevant functions, levels, and processes and also teaching them how to achieve the required quality objectives. Hence, based on the ISO 9001 regulations and procedures, this clause might have a positive impact on employees' procedural knowledge, declarative knowledge, and performance. Given this information, the following hypotheses were developed regarding the effects of procedural knowledge and ISO 9001 certifications effects on employees:

H4a Procedural knowledge significantly affects employees' motivation.

H4b Procedural knowledge significantly affects employees' contextual performance.

H4c Procedural knowledge significantly affects employees' task performance.

H4d ISO 9001 certified firms are performing better in developing procedural knowledge of employees than non-certified firms.

Training

Scaduto et al. (2008) define training as 'the systematic acquisition of skills, rules, concepts, or attitudes that result in improved performance in another environment.' They maintain that a training process is needed which functions as coordinated exercises or procedures undertaken by the administration for enhancing employee perceptions, behaviors, and abilities as a knowledge creation process for the required tasks (Polo et al. 2018; Schmidt 2007).

Carlisle et al. (2019) discuss the effectiveness of training in organizations and its impact on task performance using the person–environment fit theory. According to this theory, in line with the organizational concept, there should be congruence between personal traits and external conditions so as to adjust policies relevant for a transition to temporary working settings (Goetz et al. 2020). Carlisle et al. (2019) maintain that training for the required tasks decreases the misfit between the person and his/her environment as also the stress that the person may suffer from. Hence, they note that suitable training significantly increases task performance. There are no studies which evaluate the role of declarative and procedural knowledge. Thus, this study plays an important role in elaborating on this differentiation. It is important to understand the mediating role of declarative and procedural knowledge in the effect that it has on training and employee performance.

Based on the ISO 9001:2015 Clause 7.2 'Competence, Training and Awareness: The organization shall determine the necessary competence of person(s) doing

work under its control that affects its quality performance' (Keen 2020). This clause clearly states that organizations must organize training programs to increase their employees' knowledge and make them more competent in the jobs that they are performing. Therefore, ISO 9001 certified firms are expected to analyze the competence of each employee in doing a specific task and organize related training programs to increase employees' declarative and procedural knowledge (Wilson and Campbell 2020).

Lu and Betts (2011) note the essential prerequisites for successful training as: training should be knowledge oriented, it should have adequate time to be put into practice, and the management's cultural commitment. Hence, training is linked to staff members' declarative and procedural knowledge. However, it can also be proposed that providing knowledge to employees through training might have a positive impact on their performance. Hence, the following hypotheses regarding training and ISO 9001 certification's effects of the training are proposed:

H1a Training significantly affects employees' declarative knowledge.

H1b Training significantly affects employees' procedural knowledge.

H1c Training significantly affects employees' motivation.

H1d ISO 9001 certified firms are performing better in training than non-certified firms.

Rewarding

Rewarding is one of the most influential tools of human resource management that is positively correlated to employee motivation and performance (Joniakova et al. 2020). According to Bratton and Gold (2017), a reward refers to 'all monetary, non-monetary and psychological payments that an organization provides for its employees in exchange for the work they perform.' Further, de Gieter et al. (2010) explain psychological rewards as a positive consequence of aspects of the employee-supervisor relationship like authority, title, positive performance feedback, and similar expressions from supervisors, while monetary incentives are values such as payments or bonuses. As explained in the previous section, employees' knowledge acquisition plays an important role in their performing well. In this context, rewarding might lead employees to increase their knowledge to boost their performance. Besides, no study explains the mediation of declarative and procedural knowledge in rewarding and employee performance.

In line with the resource-based theory, Barney (1991) noted that for achieving competitive advantage in the market, 'unique resources and capabilities in ways that generate more value than initially are acquired.' The resource-based theory also emphasizes that developing human capital, physical, and organizational resources in an organization through training programs, rewards and recognition procedures might have a positive impact on an organization's sustainable competitive advantages (Lewis et al. 2006). Gungor (2011) found that organizations' incentive systems were positively related to employee motivation which, in turn, significantly affected their organizational effectiveness.

Alassaf et al. (2020) found a relationship between rewarding, employees' knowledge attitudes, and open innovations. Schneckenberg (2014) suggests that rewarding is an important determinant of open innovations. When employees are rewarded, it might evoke a desire to learn in them, because without knowledge a better performance is hard to achieve. Thus, it is estimated that rewarding might affect employees' knowledge demands.

Clause 4.1.2, ISO 9001:2015 requires, 'Understanding interested parties' needs.' This clause is clearly related to understanding the expectations of all parties related to a firm like its customers, business partners, stakeholders, and employees. In this regard, understanding employee expectations can be explained as recognizing their good efforts and rewarding them as motivation for more good efforts (Keen 2019). Hence, firms which are ISO 9001 certified are supposed to establish a specific rewarding system for motivating their employees to help improve their declarative knowledge, procedural knowledge, and performance. Based on this information, the following hypotheses regarding rewarding and ISO 9001 certifications effects were developed:

H2a Rewarding significantly affects employees' declarative knowledge.

H2b Rewarding significantly affects employees' procedural knowledge.

H2c Rewarding significantly affects employees' motivation.

H2d ISO 9001 certified firms are performing better in rewarding than non-certified firms.

Motivation

Motivation refers to 'the psychological process that gives behavior purpose and direction; a predisposition to behave in a purposive manner to achieve specific, unmet needs; an internal drive to satisfy an unsatisfied need and the will to achieve' (Nurun Nabi and Dip 2017). In addition, work motivation means the mechanisms of action undertaken by employees for the required tasks (Chiang and Jang 2008). Employees' motivation, thus, reflects the inner circumstance or beliefs that drive productive actions based on job requirements.

Many researchers have linked motivation and performance positively (Chien et al. 2020; Oncioiu et al. 2018; Zaim et al. 2020). Lazaric (2008, p.221) notes that organizations' rewards and training programs have a positive impact on employees' motivation and attachment to the organization. Additionally, she claims that lack of training has a negative influence on the desire to acquire declarative knowledge, thereby improving procedural knowledge. Similarly, Aguinis (2009, p.91) reports that when employees encounter challenges with managers or procedures (rewards, payments, training), they are adversely impacted by motivation that limits their performance in their functions. On the other hand, Christian et al. (2011) noted that motivation is an important predictor of contextual and task performance.

Dysvik and Kuvaas (2008) found that motivation mediated in the relationship between training opportunities and contextual performance. Hence, employees' motivation significantly mediates in the relationship between knowledge generation processes and performance (Lazaric 2008). Aguinis (2009) claims that a salesperson

who does not have enough motivation will not perform well despite his/her declarative and procedural knowledge. Salespersons will perform much better if they are motivated. In this context, motivation might be a mediator between antecedents and employees' performance.

In Clause 7.3.2 ISO 9001:2015 requires 'Employee motivation and empowerment' which needs establishing and maintaining documented processes for motivating employees (Shourty 2020). As rewarding, empowerment, communication, and recognition are some of the vital drivers of motivation, ISO certified firms should actively and functionally use these drivers to keep employees' motivation levels high. Based on this, we developed the following hypotheses:

H5a Motivation significantly affects employees' contextual performance.

H5b Motivation significantly affects employees' task performance.

H5c ISO 9001 certified firms are performing better in motivating employees than non-certified firms.

Contextual performance

Contextual performance is defined as employees' extra behavior, which is not directly recognized like helping others, being active, being punctual, being supportive, and following regulations and updates appropriately (Aboagye et al. 2022; Rubaca and Majid Khan 2020; Torlak et al. 2021). Meyers et al. (2020) note that contextual performance has a positive impact on group performance and organizational effectiveness. However, some researchers also note that lack of contextual performance at the workplace leads to negative employee outcomes such as burnout, stress, absenteeism, and turnover (Budur and Poturak 2020).

Rubaca and Majid Khan (2020) note that rewarding is an important trigger in contextual performance. However, they argue that organizational support is a more important motivator of employees' contextual performance vis-à-vis lack of resources or in risky situations such as firefighters' jobs. Following this further, Aboagye et al. (2022) maintain that the risk factors are significantly and negatively related to employees' contextual and task performance. Since contextual performance is employees' discretionary behavior like helping supervisors and coworkers, unless they are not motivated with payments, regulations, or required knowledge, employees will not be able to put in an extra effort for the organization (Aboagye et al. 2022).

Contextual performance is a supportive and innovative approach that promotes employees' adaptation to an organization and enhances their problem-solving skills. Such employees aim to improve their efficiency (Rubaca and Majid Khan 2020). He et al. (2019) observed that based on the theory of social exchange (positive experiences disperse further positive reactions), a helping behavior (contextual performance) among the workers' leverages collaborations and coordination that, in turn, improves their performance. On the other hand, Budur and Poturak (2020), He et al. (2019), and Yam et al. (2017) maintain that pressure on workers is not always transferred to a better performance. This connection needs to be investigated further. We propose the following hypotheses:

H6 Contextual performance significantly affects employees' task performance.

H6a ISO 9001 certified firms are performing better in developing contextual of employees than non-certified firms.

Task performance

Performance refers to individual or collective accomplishments based on job requirements (Ahmad et al. 2018). Aguinis (2009) explains task performance as employees' direct activities in turning raw material into goods and services. Borman and Motowidlo (1997) define task performance as 'how well an individual performs the duties required by the job.' Ahmad et al. (2018) observe that task performance is significantly influenced by individual characteristics and environmental factors. Individual factors refer to employees' skills, abilities, knowledge, and perceptions about the job, while environmental factors include facilities, physical conditions, coworkers and supervisors, and processes.

Astrini (2018), Demir et al. (2022), Lin and Wu (2005), and Wilson and Campbell (2020) discuss the importance of ISO quality management systems for the effectiveness of an organization. Demir et al. (2022) found that the knowledge utilization process had a positive impact on a company's sustainable performance. Lin and Wu (2005) maintain that organizations can facilitate knowledge sharing processes among its employees through quality management systems and tools (rewarding, training, and controlling) which, in turn, significantly leverage organizational performance. Organizational performance depends on collective performance which refers to teamwork and collaborations (Ahmad et al. 2018). Thus, researchers note that a combination of declarative and procedural knowledge has a significant effect on motivation that, in turn, positively influences overall task performance (Ahmad et al. 2018). Based on the hypotheses developed in this study, the framework of the hypothesized model is given in Fig. 1.

ISO 9001

ISO 9001:2015 is a certificate developed by the International Organization for Standards. This certificate includes the sum of the standards that the companies set themselves so that they do not fall below certain quality standards (Demir 2021). Till this version, firms were certified separately as ISO 9001/2/3 in 1987 (Guler et al. 2002). Quality management systems were originally designed by adopting Britain's 5750 standards. Revisions were made every 7 years to develop the standards. The first revision was done by combining the certification (which was given separately as ISO 9001/2/3 in 1994), under ISO 9001:2000 as a single certificate (Demir 2021). This version stipulated integrating the following eight dimensions into the system (Wilson and Campell 2016):

1. Leadership
2. Involving people
3. Customer focus

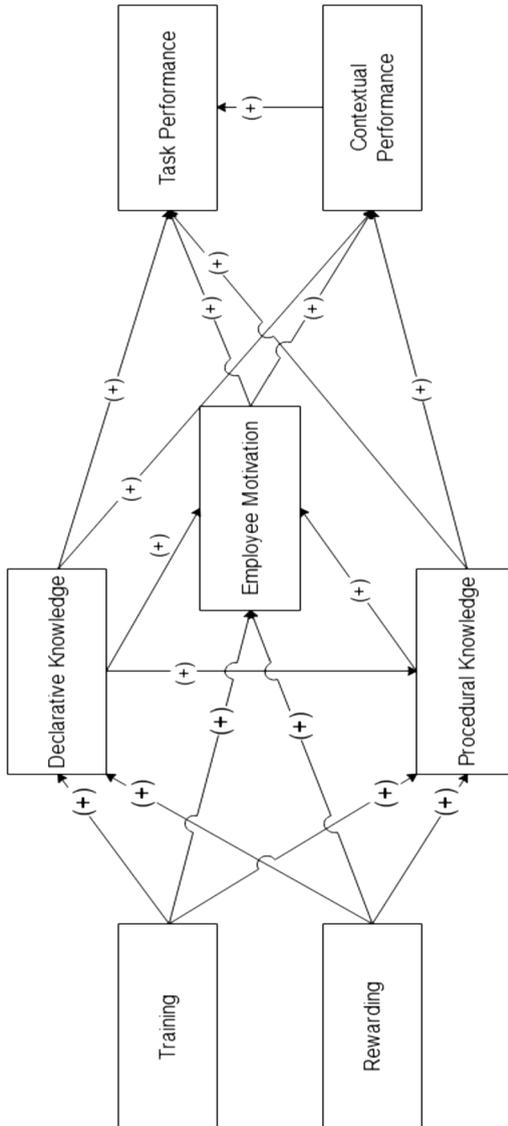


Fig. 1 The study model

4. Supplier management
5. System approach management
6. Process management
7. Data analysis and decision making
8. Continuous improvement

Later, ISO 9001:2000 came up with the second revision as ISO 9001:2008. Till the 2015 version, ISO demanded two types of non-conformance regulations, corrective and preventive. The former was for eliminating non-conformity as a corrective action when it occurred and to determine the steps to be taken to prevent it from occurring again. On the other hand, the latter aimed to eliminate non-compliance before it occurred by determining the steps to be taken based on the risk that may occur (Demir 2021; Demir and Guven 2017; Michalska-Ćwiek 2009). In its 2015 version, the certificate combined two actions and brought the principle of risk-based management approach to both. Thus, management now aimed to reduce corrective actions by having a risk-oriented thinking.

Basic steps need to be taken to get an ISO quality management systems certificate. These are (Demir and Guven 2017):

1. The top management's decision to obtain the ISO quality management systems certificate
2. Establishing a commission for this purpose
3. Choosing a team from among the staff members team that will receive the quality management systems certificate
4. Carrying out preliminary inspection before starting work
5. Establishing system creation planning
6. Providing the senior management with in-depth training on the way forward in ISO quality management systems
7. Determining all the existing processes of the organization
8. Creating organizational processes, instructions, and all necessary documents and integrating the existing ones into the system
9. Establishing an internal audit team and training it for an ISO QMS audit
10. Using the system and the internal audit team for auditing this system after a certain period and preparing reports
11. Inviting external auditors to audit the system
12. After receiving a positive report from the external auditors, starting the certification process and obtaining a certificate

Methodology

Sample

This study's purpose is investigating the links between declarative knowledge, procedural knowledge, and performance. In this context, we developed a model

which tests the impact of training and rewarding on employees' knowledge, motivation, and performance. We also tested the direct and indirect impacts of declarative and procedural knowledge on employees' motivation and contextual and task performance. Lastly, we investigated the moderation effect of ISO 9001 certification on these effects.

The sample covers 423 employees in 11 private organizations in Turkey. The organizations are primarily in the textiles, food production, and mining sectors. The sampling was done using the convenience sampling method. Moreover, some top managers of the selected companies responded positively to our proposal that we will survey their employees; some of them were managers who were our acquaintances. However, employees working in the relevant companies participated in the survey on a voluntary basis, that is, when they were asked to participate in the survey, only those who said that they would participate in the survey voluntarily were asked the survey questions. Employees who did not want to participate in the survey for any reason were excluded. After considering 11 companies included in the study using the convenience sampling method, it was determined that there were about 1,000 employees in total of which 423 employees responded positively to participating in the study. The questionnaires were answered by these employees. The demographic details of the sample are given in Table 1.

The employees were given a survey questionnaire for evaluating their department colleagues' performance. Data were collected through face-to-face interviews. Employees sought clarifications on questions they did not understand while filling the questionnaire.

Measures

All the variables used in this study were rated by a 5-point Likert scale. Questions on training and rewarding were adopted and modified from Metabis and Al-Hawary (2013). Both dimensions contain three items. Questions on declarative knowledge, procedural knowledge, motivation, task performance, and contextual performance were inspired by Aguinis (2009). Declarative knowledge contains four questions and procedural knowledge three; motivation four; task performance three; and contextual performance contains four questions. The questions were asked in Turkish language. The questionnaire used in the study was originally prepared in English. The questionnaire was translated into Turkish by an academic staff member working at

Table 1 Demographic distribution of the sample ($N=423$)

ISO 9001 certification	%	Age	%	Education	%	Position	%
Yes	55.3	18–25 years	22.0	High school or less	37.6	Employee	58.4
No	44.7	26–35 years	30.5	Two years of university	22.0	Supervisor	13.9
		36–45 years	25.5	Bachelor's degree	32.6	Expert	19.1
		46–55 years	16.5	Master's degree or higher	7.8	Manager	8.5
		More than 56	5.4				

the Pamukkale University so that it could be applied in Turkey. The translated form was approved by two experts in the field, and it was concluded that the questionnaire was ready for implementation. The survey was piloted for the first time in 2020 by one of the authors of this article, and its results successfully passed the reliability and validity tests. Later, the survey was applied in a study in the Kurdistan Region of Iraq. Within the scope of this study, it was applied in Turkey. The application in Turkey was carried out by a Turkish researcher who participated in this research in Turkey.

Methodological approach

The collected data were subjected to a validity and reliability analysis. In this part, an exploratory factor analysis, a confirmatory factor analysis, discriminant, and convergent validity, and Cronbach's alpha methods were used. After passing the validity and reliability tests, the hypotheses were tested by the structural equation model analysis method. Finally, a comparison of the companies that had an ISO 9001 certification and those that did not was tested using the independent-samples *T* test methodology.

Structural equation modeling is a state-of-art method, especially in the field of social sciences, which is used to test the effects of independent variables on dependent variables and to measure and prove causality that exists or is hypothetically estimated to exist between these variables (Chin 1998; Torlak et al. 2021). This methodology tests the accuracy of the sub-dimensions (survey questions) grouped and turned into a dimension by the researcher, and then causally tests the hypothetical path of the created model (McDonald and Ho 2002; Hair et al. 2017). This modeling, which has important threshold parameters such as the goodness of fit index (GFI), root mean squared error of approximation (RMSEA), the comparative fit index (CFI), and the Tucker–Lewis index (TLI) (Hooper et al. 2008; Iacobucci 2010), is quite competitive as long as the threshold values can be met for each parameter. Using this method, accurate results can be obtained (Devlieger et al. 2016).

This methodology, which is a mix of a factor analysis and a structural path analysis, is used by many researchers to measure direct and indirect effects of the independent variables on the dependent variables (Lee et al. 2011). For this reason, the structural equation model, which can give better results than many other regression models in terms of model fit values (Devlieger et al. 2016), was preferred for this study to measure the causal effects of the independent variables on the dependent variables.

Research findings

Validity and reliability

An exploratory factor analysis (EFA) and Cronbach's alpha were used for reaching the initial validity. For these procedures, the IBM SPSS 24 software was used. Based on EFA's results, the Kaiser–Meyer–Olkin (KMO) results were checked. Procedures required that this must not be less than 0.5 for accepting the sample as adequate. KMO's results were 0.90 and Barlett's test of sphericity was significant at $p < 0.01$; hence, the sample can be considered enough for an analysis.

Our study has seven dimensions: rewarding (three items), training (three items), declarative knowledge (four items), procedural knowledge (three items), motivation (four items), task performance (three items), and contextual performance (five items). Cronbach's alpha values of each dimension were between 0.73 and 0.92. The threshold value of Cronbach's alpha is 0.70 for it to be considered a reliable construct. Hence, the dimensions of our study can be accepted as being reliable. Factor loadings of the items changed between 0.559 and 0.849. Moreover, the constructs of the survey questionnaire explained 64 percent of the overall variance, which is expected to be a minimum of 50 percent. Lastly, extraction values are not supposed to reduce below 0.5, which is confirmed in Table 2.

After the exploratory factor analysis, we did a confirmatory factor analysis (CFA) and convergent and discriminant validity tests using the IBM AMOS 24 software. Given CFA's results, standardized loadings (SL) for each item under the concerned construct were between 0.652 and 0.921 (see Table 2) which held sufficient factor load (Demir et al. 2022). Second, average variance extracted (AVE) for each dimension was above 0.50 and composite reliability (CR) was above 0.70 (see Table 3). Hence, they are within the acceptable range of values (Demir et al. 2022). When the model fit values of CFA were examined, it was observed that the good fit index (GFI), adjusted good fit index (AGFI), and comparative fit index's (CFI) values were above 0.90, root mean squared error of approximation (RMSEA) value was 0.051, and χ^2/df value was 1824 ($\chi^2 = 388,433$ $df = 213$) (see Table 3). This shows that the results of the confirmatory factor analysis were successful, and the model could be analyzed further (Olobatuyi 2006; Torlak et al. 2019).

Lastly, we conducted discriminant validity which measures the distance of each dimension from the other constructs. This requires that the square root of average variance extracted for each latent variable must be higher than the correlation of that construct with the other dimensions (Demir et al. 2022). It was observed that all the square roots of average variance extracted were above the values of correlations; hence, discriminant validity was achieved (Table 3).

Table 2 Factor analysis' results

Item	Mean	Std. deviation	Extraction	Loadings (SPSS)	Loadings (AMOS)	Extracted variance (%)	Cronbach's alpha
DK1	4.10	1.126	0.632	0.683	0.680	19.0	0.76
DK2	4.27	1.003	0.580	0.735	0.652		
DK3	4.18	1.091	0.675	0.697	0.789		
DK4	4.33	1.025	0.651	0.781	0.783		
PK1	3.77	1.051	0.706	0.755	0.672	14.5	0.73
PK2	4.12	1.046	0.500	0.559	0.692		
PK3	4.18	0.996	0.604	0.711	0.681		
M1	4.13	0.997	0.607	0.681	0.664	8.3	0.79
M2	4.00	1.058	0.636	0.715	0.789		
M3	3.95	1.083	0.619	0.709	0.697		
M4	3.97	1.034	0.516	0.556	0.809		
TP1	3.70	1.229	0.596	0.725	0.710	6.8	0.86
TP2	3.73	1.262	0.742	0.831	0.776		
TP3	3.55	1.318	0.694	0.804	0.700		
CP1	3.71	1.321	0.766	0.836	0.774	6.5	0.92
CP2	3.73	1.331	0.726	0.814	0.717		
CP3	3.79	1.397	0.805	0.849	0.681		
CP4	3.82	1.402	0.769	0.822	0.703		
T1	4.02	1.111	0.700	0.687	0.878	5.6	0.76
T2	3.65	1.197	0.541	0.641	0.857		
T3	3.95	1.054	0.656	0.756	0.839		
R1	4.25	0.959	0.744	0.842	0.875	3.8	0.77
R2	3.86	1.131	0.601	0.678	0.818		
R3	4.30	0.923	0.615	0.729	0.725		

DK declarative knowledge; *PK* procedural knowledge; *M* motivation; *TP* task performance; *CP* contextual performance; *T* training; *R* rewarding

Table 3 Convergent and discriminant validity

Constructs	C.R	AVE	1	2	3	4	5	6	7
Rewarding	0.776	0.503	0.709						
Training	0.749	0.515	0.238	0.717					
Declarative knowledge	0.809	0.503	0.319	0.245	0.709				
Procedural knowledge	0.766	0.587	0.402	0.531	0.475	0.766			
Motivation	0.788	0.517	0.435	0.590	0.475	0.704	0.719		
Task performance	0.846	0.704	0.101	0.209	0.283	0.373	0.460	0.839	
Contextual performance	0.906	0.680	0.104	0.196	0.376	0.428	0.477	0.812	0.824

Fit indices: χ^2 (CMIN/DF)=2.117; goodness of fit index (GFI)=0.92; adjusted goodness of fit index (AGFI)=0.91; CFI=0.92; and root mean square error of approximation (RMSEA)=0.051

CR composite reliability; *AVE* average variance extracted

Hypotheses testing

Direct effects

We conducted structural equations modeling (SEM) to test the hypothesized model given in Fig. 1. In the model, direct and indirect effects were tested along with moderation effects.

The results of the model that we used in IBM AMOS 24 were based on the maximum likelihood estimator. Table 4 gives the results of the hypotheses including different goodness of fit indices of the model. The model shows that Chi-square statistics (χ^2/DF) were below 5 (1,824), thus showing a good value (Bagozzi and Yi 1988). GFI (0.92), AGFI (0.89), CFI (0.95), and RMSEA's (0.05) values were at acceptable levels. Hence, the hypotheses' results are valid.

Based on the results reported in Table 4, first it was seen that training (H1a, $\beta = 0.161, p < 0.05$) and rewarding (H2a $\beta = 0.261, p < 0.01$) had a significant impact on employees' declarative knowledge. These two dimensions explained 13 percent of the variance in declarative knowledge. Second, it was seen that training (H1b

Table 4 Hypotheses' results

H	Dependent variable		Independent variable	Direct effects	Indirect effects
H2a	Declarative knowledge	<---	Rewarding	0.261***	–
H1a	Declarative knowledge	<---	Training	0.161**	–
H2b	Procedural knowledge	<---	Rewarding	0.228***	0.095***
H1b	Procedural knowledge	<---	Training	0.43***	0.059***
H3a	Procedural knowledge	<---	Declarative knowledge	0.364***	–
H2c	Motivation	<---	Rewarding	0.182**	0.174***
H1c	Motivation	<---	Training	0.159***	0.246***
H3b	Motivation	<---	Declarative knowledge	0.075 $p > 0.05$	0.174***
H4a	Motivation	<---	Procedural knowledge	0.479***	–
H5a	Contextual performance	<---	Motivation	0.866***	–
H4b	Contextual performance	<---	Procedural knowledge	0.118 $p > 0.05$	0.415***
H3c	Contextual performance	<---	Declarative knowledge	0.333***	0.259***
H3d	Task performance	<---	Declarative knowledge	– 0.077 $p > 0.05$	0.392***
H5b	Task performance	<---	Motivation	0.259**	0.535***
H4c	Task performance	<---	Procedural knowledge	– 0.107 $p > 0.05$	0.454***
H6	Task performance	<---	Contextual performance	0.618***	–
$\chi^2: 2.117$				SMC declarative knowledge: 13%	
GFI: 0.92				SMC procedural knowledge: 45%	
AGFI: 0.89				SMC motivation: 74%	
CFI: 0.95				SMC contextual performance: 30%	
RMSEA: 0.05				SMC task performance: 71%	

H hypothesis; GFI goodness of fit index; AGFI adjusted goodness of fit index; CFI comparative fit index; RMSEA root mean square error of approximation; and SMC: squared multiple correlation

$p > 0.05$ shows that the effect is not significant

***, **, * significant at less than 0.01, 0.01–0.05, and 0.06–0.10 percent levels of significance

$\beta = 0.430, p < 0.01$), rewarding (H2b $\beta = 0.228, p < 0.01$), and declarative knowledge (H3a $\beta = 0.364, p < 0.01$) had a significant impact on employees' procedural knowledge as these explained 45 percent of the variance in procedural knowledge. The results of our analysis show that training (H1c $\beta = 0.159, p < 0.01$), rewarding (H2c $\beta = 0.182, p < 0.01$), and procedural knowledge (H4a $\beta = 0.479, p < 0.01$) had a significant impact on employees' motivation. Besides, it was also seen that declarative knowledge (H3b $\beta = 0.075, p > 0.05$) did not have a direct significant impact on employees' motivation. However, training, rewarding, and procedural knowledge explained 74 percent of the variance in motivation.

When the antecedents of contextual performance were elaborated on, it was observed that declarative knowledge (H3c $\beta = 0.333, p < 0.01$) and motivation (H5a $\beta = 0.866, p < 0.01$) had a significant and positive impact on contextual performance. Further, procedural knowledge (H4b $\beta = 0.118, p > 0.05$) did not have a direct significant impact on employees' contextual performance. Motivation, declarative knowledge, and procedural knowledge explained 30 percent of the variance in contextual performance.

Lastly, we elaborated on the antecedents of employees' task performance. The results showed that motivation (H5b $\beta = 0.259, p < 0.05$) and contextual performance (H6 $\beta = 0.618, p < 0.01$) had a significant impact on employees' task performance, and declarative knowledge (H3d $\beta = 0.077, p > 0.05$) did not have a significant impact on employees' task performance. Motivation and contextual performance explained 71 percent of the variance in employees' task performance.

Indirect effects

So far, we have elaborated on the hypotheses of direct effects (see Table 4). However, there are indirect effects of the independent variables on dependent variables. It can be noted that rewarding ($\beta = 0.095, p < 0.01$) and training ($\beta = 0.059, p < 0.01$) had a significant indirect effect on procedural knowledge. Training ($\beta = 0.246, p < 0.01$), rewarding ($\beta = 0.174, p < 0.01$), and declarative knowledge ($\beta = 0.174, p < 0.01$) too had a significant indirect effect on employees' motivation. The results of the analysis showed that training ($\beta = 0.463, p < 0.01$), rewarding ($\beta = 0.347, p < 0.01$), declarative knowledge ($\beta = 0.259, p < 0.01$), and procedural knowledge ($\beta = 0.415, p < 0.01$) had a significant indirect effect on employees' contextual performance. Lastly, training ($\beta = 0.208, p < 0.01$), rewarding ($\beta = 0.101, p < 0.05$), procedural knowledge ($\beta = 0.454, p < 0.01$), declarative knowledge ($\beta = 0.392, p < 0.01$), and motivation ($\beta = 0.535, p < 0.01$) had a significant indirect effect on employees' task performance.

Based on the results reported in Table 4, declarative knowledge partially mediated in the relationship between training and procedural knowledge, rewarding and procedural knowledge, and training and motivation. However, it fully mediated in relations between training and contextual performance and rewarding and contextual performance. Besides, declarative knowledge could not mediate in relations between training and motivation, training and task performance, rewarding and motivation, and rewarding and task performance.

It was also observed that procedural knowledge partially mediated in the relationship between training and motivation and rewarding and motivation, and fully mediated in relations between declarative knowledge and motivation. On the other hand, it failed to mediate in relations between training and contextual performance, training and task performance, rewarding and contextual performance, and rewarding and task performance.

It was observed that one of the strongest mediators in the current hypothesized model was motivation. The results show that motivation fully mediated in relations between training and contextual performance, training and task performance, rewarding and contextual performance, rewarding and task performance, procedural knowledge and contextual performance, and procedural knowledge and task performance. Because declarative knowledge did not significantly affect motivation, we do not mention mediation's effects on employees' motivation for declarative knowledge. If declarative knowledge is not converted into procedural knowledge, it does not motivate employees.

Lastly, contextual performance fully mediated in relations between declarative knowledge and task performance and partially mediated in relations between motivation and task performance. Because rewarding and training had a significant but negative impact on contextual performance, we can conclude that only motivation is at the center of mediating relations between these variables and task performance. Procedural knowledge did not affect contextual performance significantly but over the motivation; hence, contextual performance did not mediate the relations between procedural knowledge and task performance.

T test results

After testing the indirect effects, we elaborate on the differences between ISO 9001 certified firms and non-certified firms. For this, we used an independent-samples *T* test algorithm of IBM SPSS. The results of the analysis are given in Table 5. Based on the results of the analysis, it can be seen that ISO 9001 certified firms were better in terms of declarative knowledge as compared to non-certified firms. Our results also show that the mean of declarative knowledge in ISO 9001 firms was 4,29; this was 4,13 in non-certified firms. Moreover, this difference was significant at $p < 0.05$. Hence, it can be concluded that due to ISO 9001 certification's training programs, certified firms have significantly better declarative knowledge as compared to non-certified firms. However, none of the other variables significantly separated ISO 9001 certified firms from non-certified ones. Therefore, hypotheses H1d, H2d, H4d, H5c, and H6a were rejected while only H3e was accepted.

Table 5 Comparison of ISO 9001 certified firms with non-certified ones

	ISO 9001 certification	<i>N</i>	Mean	Std. deviation	<i>p</i> value
Training	Yes	234	3,8390	0,90,525	0.370 $p > 0.05$
	No	189	3,9153	0,80,916	
Rewarding	Yes	234	4,1140	0,84,707	0.490 $p > 0.05$
	No	189	4,1658	0,69,243	
Declarative knowledge	Yes	234	4,2874	0,79,121	0.047***
	No	189	4,1362	0,83,053	
Procedural knowledge	Yes	234	4,1303	0,93,748	0.620 $p > 0.05$
	No	189	4,1746	0,86,829	
Motivation	Yes	234	3,9925	0,80,449	0.580 $p > 0.05$
	No	189	4,0370	0,83,313	
Task performance	Yes	234	3,7123	1,13,631	0.280 $p > 0.05$
	No	189	3,5944	1,10,021	
Contextual performance	Yes	234	3,7889	1,17,837	0.450 $p > 0.05$
	No	189	3,7005	1,18,369	

Discussion

Rewarding

Based on the results, we found that rewarding had a positive effect on declarative knowledge. In other words, when a company had a rewarding system, there was an increase in the employees' acquisition of theoretical knowledge. Rewarding also had a direct effect on procedural knowledge. This finding suggests that when a company had a rewarding system, there was an increase in the employees' procedural knowledge. Additionally, we found that rewarding had a positive effect on motivation, that is, when a company had a rewarding system, there was an increase in employees' motivation to reach the goals. These findings are partially similar to those of Joniakova et al. (2020) and Gold (2017). They suggest that rewarding affected both motivation and performance.

Normally, literature (Keen 2019) maintains that the ISO 9001 requires firms to systemize a rewarding methodology which motivates and increases employee performance. In our study, we observed that ISO 9001 certified firms did not perform better in training as compared to non-certified firms. After these findings, we asked for appointments with various experts in the field to discuss our results. We met all the experts separately via zoom meetings. We explained to them the details of our study and asked them what they thought about our results. Their answers mainly covered the following:

- A wrong prize may have been presented to the right group of people. In other words, presenting a plaque for success in the community can make a person

happy. If you give him money, then he is not looking for money as his desire is to realize himself.

- Elements defined as rewards for employees may not be satisfactory. Those firms which do not have a certificate are thought to be the opposite.
- The awards offered by the certified enterprises may be the same as those offered by the companies without the certificate, and the rewards may satisfy the employees less or not at all.
- Due to employees' high expectations, the relationship with other variables may be less.
- Since performance measurements are done with process goals in enterprises with ISO 9001 certification, employees do not perform for the rewards, but to achieve their goals.

These results show that the rewarding system in ISO 9001 certified firms in Turkey was not applied properly so that they could become better than non-certified firms.

Training

Our analysis, first, showed that training had a positive effect on declarative knowledge. When a company had training, there was an increase in the employees' acquisition of declarative knowledge. Second, it was found that training positively affected procedural knowledge. This means that when a company had a training system, there was an increase in the employees' procedural knowledge. These findings are similar to Scaduto et al. (2008), Polo et al. (2018), and Schmidt's (2007) findings. When a company has an appropriate, individual, and analytic training system, there is an increase in the employees' motivation to reach the goals.

Based on clause 7.2 of the ISO 9001 certification (Keen 2020), it was expected that ISO 9001 certified firms organized training programs for employees which would satisfy their individual development requirements. On the other hand, the results of our analysis showed that ISO 9001 certified firms failed to perform significantly better in training as compared to non-certified firms. Further, mean of training in the non-certified firms was higher than that in certified firms, although the difference was not significant. The analysis was discussed with the various experts separately via zoom meetings and they mainly said that:

- Since companies get the ISO 9001 certificate to repel the ban on supplies or conform with the expectations of the tenders and since this certification tells us to have training, it is approached with the logic of getting training for the certification, but its effect may not be at the desired level because the employees receive training only to fulfill this obligation.
- Since personnel recruitment is done according to competence and the competence matrix in enterprises with ISO 9001 certification, personnel with this competence are employed to fill the vacant positions.

- Since the employees are at a certain level, the training provided to them does not provide them anything extra.
- The purpose of the training is not determined correctly and does not match the purpose of the enterprise.
- Employees' higher standards and expectations.
- Reasons such as the trainers not having adequate and expected profiles may not have an expected level of impact on employees' theoretical and practical knowledge and on their motivation to achieve the enterprise's goals.

Declarative knowledge

We found that declarative knowledge positively affected procedural knowledge. This means that the employees' theoretical knowledge increased over time in areas such as gaining and increasing skills. Our study suggests ideas that are similar to Alves (2005) who stated that declarative knowledge was vital for problem-solving and decision-making skills. According to Hong et al. (2018) declarative knowledge was passive knowledge and procedural knowledge was active knowledge. We suggest that for procedural knowledge, declarative knowledge has to come first. Therefore, strong training programs might increase the employees' declarative knowledge which, in turn, will increase their procedural knowledge.

Our study suggests that declarative knowledge affects contextual performance positively. In other words, an employee who acquires declarative knowledge has better contextual performance. According to Szymanski (1988), knowledge is important for employees' performance. Our study found that declarative knowledge in particular is one of the triggers of contextual performance, but it is not enough for task performance unless it is converted into procedural knowledge. We also found that declarative knowledge did not have a significant impact on motivation. This shows that only declarative knowledge is not enough for an employee to motivate her/himself to achieve the goals. Employees still need procedural knowledge for motivation.

Conversion of declarative knowledge into procedural knowledge is vital for better decision making. Therefore, ISO 9001 certified firms need to find ways to convert declarative knowledge into procedural knowledge (Demir 2021; ISO Consultant in Kuwait 2020). Our study found that acquisition of declarative knowledge among the ISO 9001 certified firms was significantly more than that in the non-certified ones. The reason for this perhaps is that during training, employees learnt the documentation system, procedures, and processes. Lack of documentation among non-certified firms as compared to certified ones could mean that that declarative knowledge of the employees in ISO 9001 certified firms was higher.

Procedural knowledge

Matsuo and Yushino (1996) maintain that procedural knowledge is one of the main drivers for employees' performance. Based on our results, we suggest that procedural knowledge impacts motivation significantly and positively. Besides,

it does not affect contextual performance and task performance significantly. This shows that unless procedural knowledge is supported with motivation, it will not affect employees' performance. These findings are similar to Aguinis' (2009) findings who also found that procedural and declarative knowledge were not enough for performance unless they motivated the employees. However, we suggest that procedural knowledge mediates the relations between declarative knowledge and motivation. Therefore, we suggest that employees are motivated not only when they acquire new knowledge, but when they convert this knowledge into skills, abilities, and capabilities. Additionally, we suggest that employees in ISO 9001 certified firms did not have significantly more procedural knowledge compared to those working for non-certified firms. When the results were discussed with the experts, they mainly commented:

- The process is documented but not sustainable. In other words, since declarative knowledge is determined or defined with an official of the private firm authorized to obtain the certificate along with the senior management, perhaps the employees do not believe in internalizing declarative knowledge and transforming it into procedural knowledge. Most of the companies get this document from the Turkish Standards Organization (TSE) as the customers want this certificate. Hence, nothing changes before and after the ISO 9001 certification.
- Employees do not make any contribution to the decision-making process, so it does not provide the desired level of transformation of this variable into procedural knowledge.
- The transformation is a return for working with the human factor. Whether it is an ISO 9001 company or not, the transformation of declarative knowledge into procedural knowledge is about humans/employees.
- Lack of dynamism in ISO 9001 certified firms shows that the relationship between the variables at a certain level led to the absence of this difference between those companies which have the ISO 9001 certificate and those which do not (this view may be suitable for all other areas).
- Elements in ISO 9001 are not very proactive. For example, when it comes to an idea you present it in terms of turning your practical knowledge into motivation and performance but there are processes such as evaluating this opportunity, going through a certain process, and getting approval and feedback in an ISO 9001 certified firm. However, an idea put forward in companies which do not have a certificate can be implemented immediately when the supervisor clears it.
- If the employee's relationship with the manager does not follow a positive course, this will not turn into better performance. A primary supervisor is important in the transformation of procedural knowledge into motivation and performance.
- A 'people come and go; the important thing is to set up processes' approach does not always lead to results. It is important to create compatible teams by keeping the human factor in the foreground. Only then will the transformation into motivation and performance take place.

- The fact that the transformation of procedural knowledge into performance is a time-consuming process and this time has not yet taken place may reveal a similarity between certified and non-certified companies.

Motivation

Like previous researchers, our study also found the effect of motivation on contextual performance to be significant (Chien et al. 2020; Oncioiu et al. 2018; Zaim et al. 2020). In other words, a highly motivated employee's contextual performance also increased significantly. Moreover, the effect of motivation on task performance was significant. There was an increase in an employee's ability with high motivation to reach his goals completely.

Dysvik and Kuvas (2008) found that motivation mediated the relationship between training and performance. Our results add that motivation fully mediated the impact of training, rewarding, and procedural knowledge on contextual performance. In other words, it was found that employees who were motivated by the rewarding and training in the organization and who had appropriate procedural knowledge showed a significantly higher contextual performance. Further, motivation fully mediated the impact of training, rewarding, and procedural knowledge on the employees' task performance. We conclude that the impact of training and rewarding on task performance is meaningless unless the employees are motivated by these incentives.

Based on clause 7.3.2., ISO 9001, Shourty (2020) maintained that ISO 9001 certification boosted the impact of rewarding, empowerment, recognition, and communication on the employees' motivation positively. However, we suggest that employees of ISO 9001 certified firms were not significantly more motivated than the ones in non-certified firms. There was no significant difference between them. When we discussed the results with the experts, they maintained that:

- Although suggestions were received from the employees within the scope of declarative knowledge, in some cases, the suggestions were not applicable and the employees who had made the suggestions thought that their opinions were not valuable, and their motivation became low.
- Since the expected environment (organizational culture, organizational climate) for the transformation of declarative knowledge into procedural knowledge or the transformation of motivation is not achieved, there may be differences in the performance and outcome.
- The relationships between variables cannot be evaluated separately. If motivation is not at the desired level because of training, rewarding, declarative, and procedural knowledge, it does not turn into better performance.
- A motivation process that cannot transform into contextual performance cannot transform into task performance anyway.
- Since motivation tools for employees are not diverse and are similar for all companies, there may not be a distinctive difference from the point of conversion of motivation to performance.

Contextual performance

The findings of our study suggest that contextual performance significantly affected the employees' task performance. Second, we suggest that contextual performance fully mediated the impact of declarative knowledge on task performance. This means that the employees, who acquired new knowledge by their firms' help and organization, showed higher contextual performance and in return, they performed better in their tasks. In this context, our findings are similar with those of Meyers et al. (2020) and Majid Khan (2020) who suggested that contextual performance positively influenced the employees' task performance in groups. Additionally, for declarative knowledge to be converted into task performance, we suggest that employees should have opportunities for deliberate practical training and converting that knowledge into procedural knowledge. In return, these employees will be more motivated and contextually attached to the organization. As a result, their performance will become better.

Lastly, we found that employees at ISO 9001 certified firms did not have significantly better contextual performance compared to those at non-certified firms. When the results were discussed with the experts, they suggested that:

- Employees' contextual performance was defined as commitment to the organization, commitment to work, discipline... etc. The quality certificate may not include aspects such as organizational culture and commitment, and this may lead to no differences between certified and non-certified firms.
- Since there is no proper training or awareness-raising activity, there is no significant difference between the employees' acquisitions with other variables or the transformation of these into performance.

Task performance

It is suggested that the main drivers of task performance are primarily contextual performance and motivation. However, the motivated employees will have higher contextual performance in their organizations. Additionally, declarative knowledge and procedural knowledge are not enough to increase the employees' task performance. There is a vital need for motivation and contextual performance. Besides, this does not seem an issue in ISO 9001 certification for marketing or avoiding some tenders being banned but leadership and commitment to the real quality management principles not clear. Demir (2021) came to similar conclusions in his review which found that ISO 9001 certification would not affect performance if the organizations did not use the principles of the certification properly.

Conclusion

This study's aim was understanding the links between employees' declarative knowledge, procedural knowledge, and performance. It investigated these links in the context of ISO 9001 certification. The most important findings of the study are that training and rewarding affect employees' declarative and procedural knowledge significantly, which, in turn, motivates them to achieve their goals and increases both their contextual and task performance. Another finding is that unless declarative knowledge is converted into procedural knowledge, it does not motivate employees sufficiently, and in turn their performance does not increase. It was also found that unless employees are motivated, neither declarative nor procedural knowledge is enough to increase their performance.

The results for ISO certified and non-certified firms show that, in most cases, ISO 9001 certified firms were in a negative situation as compared to non-certified firms. The results also showed that when the requirements of the ISO 9001:2015 certification such as rewarding and training are not applied by the firms appropriately, it does not lead to benefits and might even impact the performance negatively. In this regard, it might be suggested that ISO 9001:2015 certified firms either need to specify the main purpose of the certification as implementing the principles of quality management systems appropriately or not being certified at all. Otherwise, the certification might turn into only paperwork and bureaucratic hurdles for the employees. Further, as the non-certified firms are better in some circumstances as compared to the certified firms, it can be concluded that rather than ISO 9001:2015 certification, applying the main principles of quality management systems are more crucial for employees' performance.

Limitations and suggestions for future studies

Our study has some limitations. First, the model is tested only in Turkey and needs further experimental research for its generality. Second, the model is tested in a limited number of sectors and organizations. It also needs to be tested in the services, hospitality, and telecommunication sectors besides others. Third, the ISO 9001 certified firms in this study were clearly implementing the principles of certification poorly. Hence, future researchers should test the model in organizations which apply the principles properly and fully.

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Declarations

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