The mediating role of explicit knowledge sharing in the relationship between empowering leadership and proactive work behavior in defense industry enterprises

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ABSTRACT

This paper aims to investigate the mediating role of explicit knowledge sharing in the relationship between empowering leadership and proactive work behavior in defense industry enterprises. The sample of this study consists of defense industry enterprises operating within the borders of Turkey. A total of 305 survey data were collected from these enterprises using the random sampling method, and 5 survey data among them were eliminated because of missing information, and analyzes were made with a total of 301 survey data. Structural equation modeling was used to test the research model and hypotheses. According to the analysis results of the study, empowering leadership has a positive effect on proactive work behavior and explicit knowledge sharing. In addition, it has been understood that open information sharing has a positive effect on proactive work behavior. Finally, it has been revealed that explicit knowledge sharing has a mediating role in the relationship between empowering leadership and proactive work behavior.

ARTICLE INFO

Article history:
Received 03 February 2022
Received in rev. form 18 May 2022
Accepted 22 May 2022

Keywords:
Empowering Leadership, Proactive Work Behavior, Explicit Knowledge Sharing

JEL Classification:
O15

Introduction

The concept of proactive work behavior is one of the dimensions of proactive behavior, and it will be important to address the concepts of proactivity and proactive behavior before mentioning proactive work behavior. The concept of proactivity was previously expressed by Bandura (1977) and is based on the concept of interactionism in social learning theory.

Proactive behavior is defined as the activities of taking initiatives to improve the current situation, challenging the status quo and making an effort to change things around us instead of passively accepting the current situation and doing business accordingly (Crant, 2000).

Being proactive is an approach that aims to predict events before they happen, take precautions with a preventive approach before events occur and be an organization with a culture of “being prepared for events” with the vision of being the party that tries to direct the events instead of being the party affected by the events (Çelebi, 2014).

Bindl and Parker (2010) listed three important reasons for organizations and individuals to be willing to exhibit proactive behavior:

Today, businesses are managed by decentralized organizations, the wind of change and transformation is blowing very fast, the importance of creating an environment of creativity and innovation in providing operational efficiency is increasingly understood by employers, and as a result, it has become very important for employees to take initiative and exhibit proactive behavior in such a business world. The level of complexity is increasing day by day in today’s businesses and it has become a necessity to develop the
ability to predict the present and the future and to take initiative individually in these businesses. If employees work only within the scope of rules and procedures as usual, it will not be possible to achieve goals and do business in an effective working environment.

The willingness of individuals in the organization to provide an environment of innovation and creativity, their ability to take initiative in this regard, and the support of employees by their leaders depend on the creation of the necessary infrastructure suitable for these conditions.

Global competition is no longer just for organizations. Employees are also personally interchangeable with the whole world. For example, a software developer in India is in competition with someone doing the same job all over the world. Employees at any support point that can be provided online can be in competition with those doing similar work all over the world. At this point, we come across different career journeys and employees are expected to take responsibility in their career journeys in this context. In this direction, it is expected that the employees take on their own career and work performance responsibilities in line with the goals of the organization.

Proactive work behavior is a behavior that aims to transform the organization by considering opportunities and risks and to take control at certain points. Proactive work behavior emphasizes the importance of evaluating and improving business processes by revealing process fractures. In addition, proactive work behavior also contributes to increasing the effectiveness and efficiency of the organization by targeting the interaction between employees. As Peter Drucker stated, proactive work behavior has an important place in doing the right thing (effectiveness) and doing things right (productivity) (Çelebi, 2014).

Similar to proactive work behavior, researchers have previously investigated employees' desire to receive feedback (Ashford & Cummings, 1985), employees' proactive socialization attempts (Ashford & Black, 1996), employee behavior to proactively eliminate problems (Parker, Williams, & Turner, 2006), the behavior of the employees to direct the manager (Grant, Parker, & Collins, 2009) and the proactive performance of the employees (Griffin, Parker, & Mason, 2010).

This study is designed to investigate the relationship between proactive work behavior, which is the main variable that is thought to contribute to the Turkish Defense Industry, and modern variables like empowering leadership and explicit knowledge sharing, which is the sub-dimension of knowledge sharing.

**Literature Review**

**Theoretical and Conceptual Background**

**Dimensions of Proactive Behavior**

Parker and Collins (2010) stated that there are three dimensions of proactive behavior: the first dimension is the internal environment of the organization (proactive work behavior), the second dimension is the relationship of the organization with the external environment (proactive strategic behavior), and the third dimension is the harmony of the employee with the whole organization (proactive person-environment compliance behavior).

Proactive work behavior is a set of proactive actions that target changes within the organization and aim to control these changes. Proactive work behavior also draws attention to the criticality of optimizing business processes. In this context, proactive work behavior plays an important role in increasing organizational efficiency by expecting employees to set an example for the people they work with in the same work group on the way to organizational transformation. As a result, proactive business behavior is the behavior that is required in all organizational processes and considered as a routine part of business life. As a result, proactive work behavior has taken its place in the modern business world as a set of behaviors that are needed in all organizational processes and considered as a routine part of business life.

Proactive work behavior has four basic elements as described below:

Proactive Personality: It means that the person tries to transform his/her environment by showing proactive behavior. Individuals with proactive personality are highly aware and goal-oriented. Thanks to their characteristic features, they actively seek information and make predictions about the future. They take the initiative to take the necessary actions to overcome the problems while revealing the opportunities and threats thanks to their future predictions (Bergeron, Schroeder, & Martínez, 2014).

Personal Initiative: It has three dimensions that complement each other: self-starting, proactivity and persistency. Behavior should occur spontaneously, without external pressures, task or action requirements. From this point of view, the initiative is the situation where the individual can set her/his own goals rather than the goals that the organization sets for the employee (Frese, Gartz, & Fay, 2007).

Role Breadth Self-Efficacy: It expresses the self-confidence of employees in adopting proactive, innovative and holistic job definitions such as putting different ways of doing business on their agenda and implementing them. People with this mindset display a self-confident behavior in presenting a more proactive approach apart from the techniques of past practices in the current situation. Role breadth self-efficacy is not simply a case of individuals paying attention to their specific, technical job set within their current job description. It refers to the perception that they can perform such tasks, apart from assessing whether they are allowed to do this type of work or not. (Parker, 1998).
Taking Charge: Taking charge which is another important concept within the scope of proactive work behavior, is voluntary behavior aimed at influencing corporate functionality, situations in which employees act by going beyond their defined roles, or rather by going beyond these defined roles. Taking charge can also be expressed as an extra-role behavior that requires voluntary and constructive efforts of employees to affect the organizational-functional change in the proper functioning of their jobs, business units or organization (Morrison & Phelps, 1999).

Empowering Leadership

The content of the Empowering Leader concept was created with the article “Leadership: The Art of Empowering Others” published by Conger (1989). This article analyzes the attitudes of successful senior managers when exhibiting leadership behavior. As a result, it has been revealed that the common aspect of these leaders, who successfully realize their management power, is the care they show in empowering the employee.

An empowering leader encourages employees to make decisions on their own initiative, to evaluate risks and to take action accordingly, regardless of external influences (Vecchio, Justin, & Pearce, 2010, 21).

Empowerment is about preparing the environment where employees can realize their potential competencies. For this reason, it is an important point of the empowerment journey that the leader encourages the employees to make their own decisions. It is an expected result in terms of empowering the employees to make decisions about their work and to solve the problems they encounter on their own. The leader plays a leading role not only in understanding the needs of employees to support empowerment activities and in developing resources in this context, but also in creating all necessary infrastructure and involving stakeholders in the process. It is important for the leader to encourage innovation, forcing the employees to take risks and giving them confidence in order for the employees to develop themselves. In this direction, giving feedback to employees and rewarding successful practices is highly motivating, and leaders play an encouraging and leading role in this regard (Konczak, Stelly, & Trusty, 2000).

Empowering leadership is defined as a leadership behavior that enables employees to delegate authority, to encourage them to manage and make decisions, to coach, to share information, and to receive their inputs within the scope of advancing the work (Sharma & Kirkman, 2015).

In studies conducted within the scope of the dimensions of empowering leadership, it is stated that there are five dimensions as follows (Arnold et al., 2000):

1. Leading by example is to take some actions that will show the organizational commitment of the leader and to support different working groups apart from their own duties.
2. Coaching is the state of having employees and teammates with high self-confidence through training employees to empower them and transferring knowledge and experience to them.
3. Participative decision-making is the situation where the leader includes the team members in the decision-making process, benefits from their knowledge and experience, and shapes the final decisions by taking into account the inputs from them.
4. Showing concern is to worry about the well-being of the employees and the organization, to provide the minimum conditions for employees to concentrate on their work and work more efficiently, and to observe, listen and support the employees in this context.
5. Informing is the situation in which leaders share information in line with the company’s vision, mission, goals and current developments, align everyone, and create awareness for employees within the scope of their work.

As stated in another study, empowering leaders have four main effects on employees (Baltaş, 2002, 138):

1. Employees in the organization act in line with the vision of their leaders. In this context, employees continue to work in line with the mission that the vision imposes on the company.
2. A correct leadership brings with it the highest level of trust and belief. Employees believe that their leaders will carry the company forward, and they work on this path by feeling responsible. This situation gives power to the leaders to direct the organization in line with the vision.
3. The fact that the relevant actions are taken in the organization creates a sense of competence and success in the employees. This makes it easier for employees to be self-confident for future work, to remain calm in the face of problems they can encounter, and to believe that they can overcome the difficulties and complete the work.
4. With such an empowering leader, employees will be much more likely to work in organizations with high quality, perform effective teamwork, develop the ability to make quick decisions, and end processes positively.

Explicit Knowledge Sharing

For the first time, scientist Michael Polanyi, born in 1891 in Budapest, classified knowledge in two different groups as explicit and tacit knowledge in his book “The Tacit Dimension” published in 1966. Polanyi (1966) defines explicit knowledge as the information...
contained in books, magazines, documents, reports and IT infrastructure, while implicit knowledge is expressed as the information contained in the minds and experiences of individuals (Polanyi, 1966 as cited in: Nonaka, 1994).

Explicit knowledge is a type of knowledge that can be easily documented and shaped, and thus easily accessible and transferred by everyone (Choi & Lee, 2003). Since explicit information can be conveyed to other people in written and verbal form, it is in a format that can be easily expressed with the necessary infrastructures or in mutual negotiations. For this reason, it becomes more comfortable to share and imitate explicit information with third parties (Bloodgood & Salisbury, 2001, 58).

The quality of explicit knowledge also affects the quality of knowledge circulating within the organization. Effectively distributing accurate knowledge improves the quality of action taken within the scope of this knowledge and facilitates the use and transmission of emerging explicit knowledge (Nonaka, 1994).

Since explicit knowledge can exist in symbolic or written form, it includes almost all forms of knowledge sharing institutionalized within organizations. Explicit knowledge sharing practices are more common in the workplace because explicit knowledge can be easily understood, codified and communicated throughout the organization. Management mechanisms such as procedures, handbooks and information systems will increase the willingness of employees to share their explicit knowledge (Wang & Wang, 2012, cited in Coakes, 2006).

An organization creates and shares knowledge as a result of interactions between explicit and tacit knowledge. During this interaction process, explicit and tacit knowledge take different forms. This is of great importance in terms of creating, sharing, transferring and increasing the value of knowledge. This interaction between explicit and tacit knowledge has been introduced to the literature by Nonaka and Takeuchi (1995) as the concept of “knowledge conversion”.

This conversion process takes place as shown in Figure 1 below.

**Figure 1: Knowledge Conversation; Source: Nonaka, I. and Takeuchi, H. (1995). The Knowledge-Creating Company: How Japanese Companies Create The Dynamics of Innovation. New York: Oxford University Press.**

### Empirical Review and Hypotheses Development

**Empowering Leadership and Proactive Work Behavior**

Wang and Yang (2021) found that empowering leadership had positive effects on job characteristics and proactive work behavior. The results also showed that job characteristics and job embeddedness are key variables underlying the mechanism that establishes the relationship between empowering leadership and proactive work behavior. Therefore, the findings support that sustainable human resource management, which supports empowering leadership for proactive work behavior, can be seen as a fundamental resource for human health and organizational value at work.

Yin et al. (2017) created a model that combines empowering leadership, role breadth self-efficacy, proactive behavior and trust in leader competence with the idea of encouraging the employee's proactive behavior. The findings of the study first shed light on the net effect of empowering leadership on proactive behavior, accompanied by proactive personality, which is considered as a control variable at the individual level. Second, it was revealed that role breadth self-efficacy plays a mediating variable in the relationship between empowering leadership and proactive behavior.
A study by Kovianto and Syahrizal (2020) in Islamic Banks showed that social context plays an important role in fostering proactive behavior. In this context, research results showed that work engagement is an important mechanism in developing proactive behavior processes. Within the scope of this study, it was also stated that work engagement is a psychological phenomenon that can be triggered by workplace spirituality and empowering leadership.

Martin, Liao, and Campbell (2013), in their field experiment conducted in the United Arab Emirates over a ten-week period, revealed that both directive and empowering leadership improved work unit core task proficiency, but only empowering leadership improved proactive behaviors of work units.

Depending on given literature and research support, the following hypothesis was developed.

H1: Empowering leadership has a positive impact on proactive work behavior.

**Empowering Leadership and Explicit Knowledge Sharing**

A base study examining the relationship between empowering leadership and knowledge sharing was conducted by Srivastava, Bartol, and Locke (2006). Within the scope of this study, it was revealed that there is a significant relationship between empowering leadership and knowledge sharing.

In addition to the study of Srivastava, Bartol, and Locke (2006), Xue, Bradley, and Liang (2011) examined the process at the team level rather than the organization. By adding new findings to previous researches, they have further deepened our understanding of the dynamics of knowledge sharing within teams.

Matic, et al. (2017) also focused on the team level and examined the impact of team climate and empowering leadership on knowledge sharing behavior. Their research findings showed that team climate and delegation leadership had a positive effect on knowledge sharing and attitudes towards knowledge sharing among team members. Also, this study revealed that the attitude towards knowledge sharing has a significant impact on knowledge sharing behavior.

Lee, Lee, and Park (2014) tried to show the effect of empowering leadership on knowledge sharing behavior among team members in team-based activities that lead to a high level of absorptive capacity for effective team performance. As a result of their study, they developed and confirmed a theory that knowledge sharing behavior can increase the performance level of the project team in this context.

Lee et al. (2019) analyzed the mediating effect of knowledge sharing between empowering leadership and safety behavior and found that this effect was positive.

Depending on previous research results in the literature, the following hypothesis was developed.

H2: Empowering leadership has a positive impact on explicit knowledge sharing.

**Explicit Knowledge Sharing and Proactive Work Behavior**

According to Chen, Zhang, and Vogel (2011) knowledge sharing is a proactive behavior. Therefore, it is expected that non-participating employees will not be able to make extra efforts to share task-related knowledge to improve their duties. Since knowledge sharing itself is a proactive behavior, employees share knowledge to improve their way of doing business or develop their skills.

Employees with proactive characteristics can naturally take steps and show behaviors in order to increase and share knowledge within the scope of working life by taking part in various business processes such as expanding their skill set, finding resources, acquiring the right knowledge, taking extra responsibilities and designing internal roles. (Thomas, Whitman and Viswesvaran, 2010: 278).

Within the scope of the theory of conservation of resources, the proactive personality can play a role in increasing the share of compelling business activities such as training programs, participation in management, incentives and knowledge sharing within the organization. At this point, it is stated that proactive behavior may depend on personalities and as a result, compelling demands may increase within the scope of working life (Li, Jin and Chen 2020).

Compared to passive employees, proactive employees are more likely to actively direct and manage their environment in line with their goals. Proactive employees take immediate actions to access knowledge and chase opportunities, instead of waiting for events to take shape on their own. In this context, proactive employees pursue knowledge, put forward different approaches, work to improve business processes, and take many different initiatives to improve themselves in order to better understand workplace strategies and goals (Li, Liang, & Crant, 2010).

Within the scope of given research findings and literature review, the following hypothesis was developed.

H3: Explicit knowledge sharing has a positive impact on proactive work behavior.
The Mediating Effect of Explicit Knowledge Sharing in the Relationship between Empowering Leadership and Proactive Work Behavior

When we look at the literature, the studies in which knowledge sharing plays a mediating role are as follows:

Akram et al. (2020) confirmed with the results of the analysis that knowledge sharing plays a mediating role in the relationship between organizational justice and innovative work behavior of employees.

The results of the study of Song, Park, and Kang (2015) show that the knowledge sharing climate has a mediating effect on the relationship between servant leadership and team performance.

Al-Husseini, Beltagi, and Moizer (2019) showed the mediating effect of knowledge sharing in the relationship between transformational leadership and innovation, in the context of their research based on 250 survey data they obtained from Iraqi state universities.

Tian, Peng, and Peng (2021) analyzed the data of 320 employees and tested the mediating role of knowledge sharing in the relationship between prosocial motivation and creativity, and found a partial mediation effect.

Within the scope of previous research findings, the following hypothesis was developed.

H4: Explicit knowledge sharing has a mediating impact on the relationship between empowering leadership and proactive work behavior.

Depending on literature background and developed hypotheses the research model of the study is given below in Figure 2.

![Figure 2: Conceptual Research Model](image)

Research and Methodology

Sample and Data Collection

In our research, survey data were collected face-to-face and electronically by random sampling method from the defense industry companies operating within the borders of Turkey. Due to the high level of security in defense industry, survey data were collected through face-to-face meetings as much as possible. Those who requested that the research questionnaires be sent via e-mail after face-to-face interviews were also filled in electronically. Participants who requested that the research questionnaires be sent via e-mail after face-to-face interviews filled out the questionnaires online. In the light of the collected survey data, the research model was tested with structural equation modeling.

In this study, scales whose validity and reliability tests were completed in previous studies were used, and the answers to the items in the survey were arranged according to a 5-point Likert scale (1: Strongly disagree - 5: Strongly Agree). Analyses were made with the help of 301 available questionnaires out of 305 collected questionnaires. According to demographic findings, 69.1% of the participants are male and 60.8% are single individuals. 60.9% of the participants are under the age of 35, and 46.2% of them are graduates. In addition, approximately 60% of them have less than 3 years of experience in the positions they work for.

Analyses and Results

Explanatory and confirmatory factor analysis was applied to examine whether the data structurally overlapped with the theoretical framework. In addition, the scales were questioned with validity and reliability analysis. Methodologically, in the first stage, exploratory factor analysis was applied with the oblimin rotation minimum residues method. Kaiser-Meyer-Olkin (KMO) sample adequacy test and Bartlett sphericity test were used to investigate the suitability of the data used in the research for factor analysis. (Hair et al., 2014; Pallant, 2013). Accordingly, it was revealed that the KMO value was above 0.50 (KMO = 0.923), and the Bartlett sphericity test was significant at the 0.001 significance level (Hair et al., 2014; Pallant, 2013). In the light of these analyzes, it was
revealed that the sample was suitable for factor analysis. Showing Concern and Participative Decision Making dimensions became a single factor as a result of the factor analysis.

The factor load limit value was 0.45 (Hair et al., 2014). At this stage, the items of the coaching dimension of the empowering leadership scale were excluded from the analysis due to their low factor loadings and loading on the wrong factor. Cronbach's Alpha values were examined to ensure the internal consistency of the scales. In order to ensure internal consistency, this value should be above the level of 0.70 (Sencan, 2005; Hair et al., 2014). Accordingly, it was revealed that the internal consistency of the factors was provided in this study.

In the next step, confirmatory factor analysis was performed. In the analyzes made to verify the factor structure of the model, the bootstrap maximum likelihood estimation method with 1000 samples was used. Modification indices were examined and error values with high modification values in the same factor were correlated. The goodness of fit values of the model obtained include X2/df = 1.900, TLI=0.950, CFI=0.957, SRMR=0.050, RMSEA=0.054. As can be seen, the model's goodness-of-fit indices were found to be at the desired level (Hu & Bentler, 1999; Schumacker & Lomax, 2012; Hair et al., 2014).

Table 1: Factor Analysis and Reliability Analysis Results

<table>
<thead>
<tr>
<th>Construct</th>
<th>Items</th>
<th>EFA</th>
<th>DFA</th>
<th>SE</th>
<th>% Variance Explained</th>
<th>Validity and Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empowering Leadership (EL):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Showing Concern (SC)</td>
<td>EL_SC1</td>
<td>0.980</td>
<td>0.859</td>
<td>0.038</td>
<td>16.10</td>
<td>CA = 0.95</td>
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<tr>
<td>and Participative Decision Making (PDM)</td>
<td>EL_SC2</td>
<td>0.769</td>
<td>0.904</td>
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<td></td>
<td>EL_SC3</td>
<td>0.724</td>
<td>0.871</td>
<td>0.043</td>
<td></td>
<td>AVE = 0.52</td>
</tr>
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<td></td>
<td>EL_SC4</td>
<td>0.884</td>
<td>0.925</td>
<td>0.037</td>
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<tr>
<td></td>
<td>EL_PDM1</td>
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<td></td>
<td>EL_PDM2</td>
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<td>0.787</td>
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<td></td>
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<td>0.799</td>
<td>0.041</td>
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<tr>
<td>Proactive Work Behavior (PWB)</td>
<td>PWB7</td>
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<td>0.029</td>
<td>12.10</td>
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<td>0.777</td>
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<td>PWB5</td>
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<td>0.532</td>
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<td></td>
<td>PWB2</td>
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<td>PWB1</td>
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<td>Informing (Inf)</td>
<td>EL_Inf1</td>
<td>0.717</td>
<td>0.774</td>
<td>0.048</td>
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<td>Explicit Knowledge Sharing (EKS)</td>
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<td>KS_EKS3</td>
<td>0.591</td>
<td>0.640</td>
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<tr>
<td>Lead by Example (LE)</td>
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<td>EL_LE4</td>
<td>0.624</td>
<td>0.928</td>
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</tbody>
</table>

Notes

(i) Principal Component Analysis with Oblimin Rotation.
(ii) KMO: 0.923; Bartlett: 6985.000***
(iii) Total Variance Explained (%): 65.000
(iv) CA; Cronbach's Alpha, SCR; Scale Composite Reliability, AVE; Average Variance Extracted
(v) $X^2/df = 1.900$, TLI=0.950, CFI=0.957, SRMR=0.050, RMSEA=0.054

SCR (Bagozzi and Yi, 1988) and AVE (Fornell and Larcker, 1981) values were also examined in order to examine the reliability of the factor structures. These values are expected to be above the level of 0.70 and 0.50, respectively. On the other hand, when the SCR value is greater than 0.60, it is considered sufficient for the AVE value to be greater than 0.40 (Dilekli & Tezci, 2019). When the Table 1 is examined, it is accepted that the SCR and AVE values are at an acceptable level, that is, the validity and reliability of the factors are at a sufficient level.
Table 2: Correlation Analysis Results

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</thead>
<tbody>
<tr>
<td>Proactive Work Behavior</td>
<td></td>
<td>.369**</td>
<td></td>
<td></td>
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<tr>
<td>Explicit Knowledge Sharing</td>
<td></td>
<td></td>
<td>.409**</td>
<td></td>
<td></td>
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<tr>
<td>Lead by Example</td>
<td></td>
<td>.249**</td>
<td>.409**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informing</td>
<td></td>
<td>.260**</td>
<td>.445**</td>
<td>.712**</td>
<td></td>
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<tr>
<td>Showing Concern and Participative Decision Making</td>
<td>.232**</td>
<td>.414**</td>
<td>.733**</td>
<td>.794**</td>
<td>1</td>
</tr>
</tbody>
</table>

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

Table 3: Structural Equation Model Results

<table>
<thead>
<tr>
<th>Model</th>
<th>Independent Variable(s)</th>
<th>Dependent Variable</th>
<th>Standardized β (Critical Value)</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>Empowering Leadership → Explicit Knowledge Sharing</td>
<td>0.529*** (6.93)</td>
<td>0.280</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Empowering Leadership → Proactive Behavior</td>
<td>0.237*** (3.61)</td>
<td>0.056</td>
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</tr>
<tr>
<td></td>
<td>Empowering Leadership → Showing Concern and Participative Decision Making</td>
<td>0.964*** (11.98)</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Empowering Leadership → Informing</td>
<td>0.913*** (13.20)</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Empowering Leadership → Lead by Example</td>
<td>0.893***</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Model 2</td>
<td>Empowering Leadership → Explicit Knowledge Sharing</td>
<td>0.549*** (6.91)</td>
<td>0.277</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Empowering Leadership → Proactive Behavior</td>
<td>0.066** (1.09)</td>
<td>0.108</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Explicit Knowledge Sharing → Proactive Behavior</td>
<td>0.210** (3.26)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Empowering Leadership * Explicit Knowledge Sharing → Proactive Behavior</td>
<td>0.146** [0.05; 0.26]*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: Model 1; X²/df = 1.854, TLI=0.950, CFI=0.956, SRMR=0.051, RMSEA=0.053
Model 2; X²/df = 1.826, TLI=0.950, CFI=0.957, SRMR=0.045, RMSEA=0.052
a: 1000 Bootstrap Samples with 95% Confidence Interval

*p<0.05, **p<0.01, ***p<0.001

Structural equation modeling was used to test the relationships given in the research model. First, the relationship between empowering leadership and explicit knowledge sharing was found to be statistically significant (β; 0.529, p<0.001). In addition, it was determined that the relationship between empowering leadership and proactive work behavior was significant (β; 0.237, p<0.001). Accordingly, these findings support H₁ and H₂ hypotheses. Finally, in the context of direct relationship, explicit knowledge sharing has a significant positive impact on proactive work behavior (β; 0.210, p<0.01) by creating an empirical support for H₃ hypothesis.

In H₄ hypothesis, it was desired to investigate whether explicit knowledge sharing has a mediator role between empowering leadership and proactive work behavior relationship. In Table 3, the relationship between empowering leadership and proactive work behavior is examined in two different models. When the relationship between explicit knowledge sharing and proactive work behavior is added to the second model, it is understood that the effect of empowering leadership on proactive work behavior will decrease or disappear and this effect will continue through explicit knowledge sharing (Preacher & Hayes, 2008). While the effect of empowering leadership on proactive work behavior was significant in the first model, it was found that this effect was not statistically significant in the second model (β; 0.066, ns, p>0.05).

In order to understand whether this effect is valid or not, its significance was tested at the 95 percent confidence level with the “Bootstrap” method at the 1000 sample level (Preacher & Hayes, 2008). Since the effect was significant and the direct effect disappeared, it was understood that explicit knowledge sharing had a full mediator effect in the relationship between empowering leadership and proactive work behavior. As a result, hypothesis H₄ was also supported.
Conclusions

The defense industry emerges as an area where confidentiality is critical, countries allocate significant resources, and follow trends and technologies at a high level. With this study, we have worked with large-scale defense industry companies operating in Turkey, and we have put forward a study that has not been done before in an industry that is generally closed in terms of transferring knowledge to the outside. Accessing companies and revealing studies that have not been done before in the defense industry ecosystem, which is part of large networks that require cooperation and comparison within the scope of production, supply and technology use in the international market, contain important clues for the development of the defense industry.

Within the scope of this study, the relationships between empowering leadership, proactive work behavior and explicit knowledge sharing were examined in the field of defense industry. The validity and reliability of the factors were determined to be at a sufficient level and the hypotheses of the study were tested with the structural equation modelling. H1 hypothesis was confirmed in parallel with the studies of Martin, Liao and Campbell (2013), Yin et al. (2017), Cai et al. (2018), Jia et al. (2019), Kovianto and Syahrizal (2020), and Wang and Yang (2021). Also, H2 was confirmed in parallel with the studies of Srivastava, Bartol and Locke (2006), Xue, Bradley and Liang (2011), Lee, Lee and Park (2014), Matic et al. (2017), and Lee et al. (2019). Explicit knowledge sharing had a positive effect on proactive work behavior. Chen, Zhang, and Vogel (2011) defined knowledge sharing as a proactive behavior in their study. Bindl and Parker (2010) discussed the concepts of personality and knowledge under the title of individual differences among the antecedents of proactive behavior. Parallel to these information, in the H3 hypothesis, it was shown that explicit knowledge sharing has a positive effect on proactive work behavior. Finally, the mediating role of explicit knowledge sharing in the relationship between empowering leadership and proactive work behavior was examined for the first time in this study and this mediating effect was shown with analyses by creating a support for H4 Hypothesis.

Revealing that explicit knowledge sharing has a positive impact on proactive work behavior and that explicit knowledge sharing has a mediating role on the relationship between empowering leadership and proactive work behavior is new information that is added to the literature with this study. This study can open new research areas for followers in the future, and if the study is supported within the scope of different researches, companies can take actions to develop explicit knowledge sharing tools. In today's business world, where remote work has increased with the effect of the COVID-19 pandemic, direct and mediating effect of explicit knowledge sharing is also a striking factor in the point that businesses should increase their research on this subject.
Experimental research on the study was conducted in a restricted area. As it is known, the defense industry companies of our country are limited in size. Although the development of the defense industry in recent years is very rapid, this development is not enough to reveal a fully developed industry. Employment of white-collar workers in the defense industry is higher when compared to other industries. The inclusion of blue-collar workers in this industry is important in terms of increasing the representative power of the research findings.

**Acknowledgement**

**Author Contributions:** Conceptualization, C.Z., S.Ç.; Methodology, C.Z., S.Ç.; Data Collection, C.Z., S.Ç.; Formal Analysis, C.Z., S.Ç.; Writing—Original Draft Preparation, C.Z., S.Ç.; Writing—Review And Editing, C.Z., S.Ç. All authors have read and agreed to the published the final version of the manuscript.

**Institutional Review Board Statement:** Ethical review and approval were waived for this study, due to that the research does not deal with vulnerable groups or sensitive issues.

**Data Availability Statement:** The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy.

**Conflicts of Interest:** The authors declare no conflict of interest.

**References**


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