

**THE REPUBLIC OF TURKEY
BAHCESEHIR UNIVERSITY**

**ORGANIZATIZATIONS WITHOUT MANAGERS:
THE EFFECT OF SELF-MANAGEMENT ON
EMPLOYEE ENGAGEMENT**

Master's Thesis

TAMER CANSIZ

ISTANBUL, 2015

**THE REPUBLIC OF TURKEY
BAHCESEHIR UNIVERSITY**

**GRADUATE SCHOOL OF SOCIAL SCIENCES
WEEKEND MBA PROGRAM**

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Thesis Supervisor: Assoc. Prof. Sinem ERGÜN

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ABSTRACT

ORGANIZATIONS WITHOUT MANAGERS: THE EFFECT OF SELF-MANAGEMENT ON EMPLOYEE ENGAGEMENT

Tamer Cansız

Weekend MBA Program

Thesis Supervisor: Assoc. Prof. Sinem Ergün

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Organizations have changed several times throughout the history and a vastly superior new organizational model has been created every time. In the twentieth century, organizations had a hierarchical structure where employees had formal roles and managed by top-down command and control. However, in twenty-first century, organizations began restructuring with the effect of emerging trends such as globalization, diversity and technological advances. Eventually, modern organizational structures were created. Although these structures which are quite common in today's organizations are more flat, flexible, collaborative and innovative, today people think that they are inadequate and there is a need for new organizational structures. At this point, self-management emerges as a new concept.

With the development of organizations, several issues arise as well. One of them is employee engagement. There is a little academic and empirical research on employee engagement although it has become a subject undergoing intense study in recent years. Most of the studies on this subject are at practitioner level. Thus, it is important to study this subject as well.

This study deals with the concept of self-management and how this concept affects employee engagement. In this study, self-managed organizations are examined in detail to develop an efficient model. Self-management is conceptualized in terms of self-managed work environment and self-management leadership behaviors. Moreover, employee engagement is conceptualized based on the multidimensional approach in which job engagement and organizational engagement are distinguished from each other. The effect of self-management on employee engagement analyzed with linear regression analyses. According to these analyses, self-managed work environment and self-management leadership behaviors affect both job engagement and organizational engagement significantly.

Keywords: Self-Management, Self-Managed Organizations, Self-Managed Work Environment, Self-Management Leadership, Employee Engagement

ÖZET

YÖNETİCİSİZ ORGANİZASYONLAR: ÖZYÖNETİMİN ÇALIŞAN BAĞLILIĞINA ETKİSİ

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Tarih boyunca organizasyonlar birçok kez değişti ve her defasında çok daha üstün yeni bir organizasyon modeli oluşturuldu. Yirminci yüzyılda organizasyonlar, çalışanların resmi rollere sahip olduğu ve yukarıdan aşağıya komuta ve kontrol ile yönetildiği hiyerarşik bir yapıya sahipti. Ancak yirmi birinci yüzyılda organizasyonlar, küreselleşme, çeşitlilik ve teknolojik gelişmeler gibi gelişmekte olan eğilimlerin etkisi ile yeniden yapılanmaya başladı. Nihayetinde modern organizasyon yapıları oluşturuldu. Her ne kadar günümüz organizasyonlarında oldukça yaygın olan bu yapılar daha yatay, esnek, işbirlikçi ve yenilikçi olsalar da günümüzde insanlar modern organizasyon yapılarının yetersiz olduğunu ve yeni organizasyon yapılarına ihtiyaç olduğunu düşünmektedir. Bu noktada öz-yönetim yeni bir kavram olarak ortaya çıkmaktadır.

Organizasyonların gelişmesiyle birlikte çeşitli sorunlar da ortaya çıkmıştır. Bunlardan birisi çalışan bağlılığıdır. Çalışan bağlılığı yakın zamanda üzerinde yoğun bir şekilde çalışılan bir konu olsa da bu konu üzerine yapılan akademik ve deneysel araştırmaların sayısı çok azdır. Bu konuda çalışmaların çoğu uygulayıcı seviyesindedir. O yüzden bu konuyu incelemek de çok önemlidir.

Bu çalışma öz-yönetim kavramı ve bu kavramın çalışan bağlılığını nasıl etkilediği ile ilgilenmektedir. Bu çalışmada, verimli bir model oluşturabilmek için kendi kendini yöneten organizasyonlar detaylıca incelenmiştir. Özyönetim, kendi kendini yöneten çalışma ortamı ve özyönetim liderlik davranışları ile kavramsallaştırılmıştır. Ayrıca çalışan bağlılığı, işe bağlılık ve organizasyona bağlılığın birbirinden ayırt edildiği çok boyutlu yaklaşım ile kavramsallaştırılmıştır. Özyönetimin çalışan bağlılığına etkisi doğrusal regresyon analizleri kullanılarak incelenmiştir. Bu analizlere göre kendi kendini yöneten çalışma ortamı ve özyönetim liderlik davranışları hem işe bağlılığı hem de örgütsel bağlılığı önemli ölçüde etkilemektedir.

Anahtar Kelimeler: Özyönetim, Kendi Kendini Yöneten Organizasyonlar, Kendi Kendini Yöneten Çalışma Ortamı, Özyönetim Liderliği, Çalışan Bağlılığı

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ABBRAVIATIONS

CEO	: Chief Executive Officer
CLOU	: Colleague Letter of Understanding
HR	: Human Resources
IT	: Information Technology
JD-R	: Job Demands-Resources model
KMO	: Kaiser-Meyer-Olkin
KPI	: Key Performance Indicator
LET	: Leadership Effectiveness Training
MBO	: Management by Objectives
MSA	: Measures of Sampling Adequacy
OCB	: Organizational Citizenship Behavior
SET	: Social Exchange Theory
SMLQ	: Self-Management Leadership Questionnaire
UWES	: Utrecht Work Engagement Scale

1. INTRODUCTION

The main purpose of this study is to investigate self-management concept and the impact of this concept on employee engagement. The current study adopts a bottom-up approach to employee engagement by examining how self-management affects job engagement and organizational engagement. This study contributes to the literature on employee engagement and self-management by being one of the first to examine the relationship between them.

Self-management is an alternative method of organizing to the traditional hierarchical models of organizations and a new approach to handle the challenges that modern organizations faces, such as employee dissatisfaction, high levels of turnover and absenteeism, and counterproductive employee behavior (Manz and Sims 1987). With this organizing method, employees are no more externally controlled by supervisors. Instead, they control themselves and take the responsibility of their own behaviors. Some people (Manz and Sims 1980) argue that self-management might even substitute the effects of leadership, due to the fact that employees in self-managed organizations are encouraged to engage in leadership behaviors. People working in self-managed organizations have the autonomy to set their own goals, define expectations for their own selves, monitor and evaluate their own performance, take corrective actions, and seek resources. Generally, the employees in self-managed organizations have a variety of skills needed to perform the shifting tasks, and they receive feedback from colleagues continually.

Although self-management concept has become common in recent years, there is very limited research on it. Thus, it is difficult to form a research model based on it. Work design theory (Hackman and Oldham 1976) has focused on the group's task design which includes skill variety, autonomy and feedback. Moreover, Manz and Sims (1987) have identified self-management leadership behaviors. Thus, in this study, self-management is conceptualized with two constructs: self-management leadership behaviors and self-managed work environment which covers skill variety, autonomy, feedback and trust.

Employee engagement is another concept undergoing intense study in recent years. There are several approaches defining employee engagement and each approach proposes antecedents different from each other. According to Kahn (1990), meaningfulness, safety at work and feeling trust to meet the demands at workplace are crucial factors. Autonomy as well has been found as one of the predictors of job engagement (Schaufeli et al. 2002). Moreover, work environment that supports job resources such as professional development opportunities, task variety and opportunities to use skills, feedback from supervisors and colleagues, autonomy, authority to make decisions, social support from colleagues, supervisor coaching, and role-clarity is also very important for employee engagement. This kind of work environment with certain leadership behaviors has a positive impact on employee engagement (Breevaart, Bakker & Demerouti 2013).

There are some studies showing that self-management has several benefits for employees and organizations, including productivity improvement, cost savings, performance improvement, employee participation and employee satisfaction (Cohen, Ledford & Spreitzer 1994). However, very little is known about how it affects employee engagement. Thus, this study examines how self-management and employee engagement are related by focusing on self-managed work environment and self-management leadership behaviors, which contribute to job resources and consequently, to employee engagement.

In the subsequent chapters, past and present organizational models are explained briefly; self-managed organizations are examined in detail; and culture and work environment, organizational structure, leadership behaviors, practices and processes in these organizations are analyzed. Moreover, employee engagement concept is defined with models and theoretical frameworks, and its main drivers and outcomes are stated. The research model is formed based on aforementioned theoretical background and the model is tested with statistical methods. Finally, the results are concluded and discussed at the end of the study.

2. THEORITICAL BACKGROUND

2.1 PAST AND PRESENT ORGANIZATIONAL MODELS

In the twentieth century, most of the organizations had traditional structure. They were hierarchical and structured as a pyramid, where there was a president or other executive at the apex, many employees at the base and several layers of management in between depending on the size of the organization (Distelzweig [no date]). This pyramidal structure was generally represented by an organizational chart describing how the tasks were assigned, controlled, and coordinated; and how the responsibilities and processes were allocated to different functions and entities in order to achieve the organizational goals.

In these organizations, authority was centralized and there was a chain of command. Management relied on top-down command and control through bureaucracies in order to achieve the results. Moreover, planning and execution were strictly separated. In other words, decisions were made by top level of management and communicated downward to lower organizational tiers who were expected either to execute or to transit them down. These organizations were built upon the continuous practice of power in inter-level relationships. People principally had opportunity to communicate only with their direct superior or with their immediate subordinates depending on the level of authority. Power was maintained by establishing formal titles, ranks, and gradual reporting lines (Laloux 2014, pp.21-22). Order, stability and predictability were essential for these organizations. Thus, they had a clear chain of command, formal processes to transfer past experiences to the future, and rules that sharply defined the right way of doing things according to roles (Laloux 2014, pp.19-22).

The traditional structure in these organizations was quite efficient in the era of mass production industry which had a mechanistic organization shaped with chain-of-command, authority, discipline, and task specialization. However, with the twenty-first century, the traditional structure has been stretched to its limits and organizations have

entered an age of rapid, unstable, sudden and striking changes (Tan [no date]). Several emerging trends such as globalization, diversity, flexibility, flatness and networking (Borgatti 2001) have begun to impact organizations as they go through change.

Rapid development and reduced costs in transportation, communication and information technologies; with saturated markets and search for unsaturated ones have caused organizations to be global. As a result of globalization and changing demographics, marketplace and workplace has changed rapidly during the years. The structure of workforce has become more heterogeneous in terms of gender, race, religion, culture and personality (Hernaes 2011, p.6). The response to increased globalization and diversity has forced organizations to be more flexible. Organizations have begun to have fewer detailed rules and procedures, greater autonomy and encouragement for initiative as well as being able to reduce costs in huge amounts by being flexible. Moreover, they have become more flat reducing the management levels in their structure and become highly networked in order to catch the high pace of change and be more competitive.

New industries based on technology have arisen and business environment has become more diverse and complex with the impact of these trends (Carpenter, Bauer and Erdogan 2009, p.317). In addition, these trends have caused organizations to question authority, group norms, and the inherited status quo. Consequently, many organizations have abandoned the existing traditional top-down, rigid and hierarchical structures, and begun to develop more organic and fluid forms in order to be more sensitive, flexible and adaptable to rapid changing environment and stakeholder demands (McNamara [no date]).

The contemporary organizations are more lean, dynamic, responsive, adaptive and innovative (Robbins and Coulter 2012, p.289). Furthermore, they are more flat with horizontal communications and interactions, and more decentralized with delegated authority over tasks. They do not have vertical, horizontal and external barriers existing in traditional structures. Instead, their structures depend highly on collaboration, open communication, free flow of information and ideas, formal and informal networks, and

empowerment. Many organizations today are trying to find ways to foster collaboration and build networks not only among employees but also among suppliers, customers, partners, and competitors to gain access both internal and external knowledge and use that knowledge to accelerate innovation and change the workplace (IBM 2008). Some of these organizations depend on solely information, and therefore, they do not need even physical presence of people or workplace (Handy 1995). They use information technology (IT) effectively in order to support their work, manage knowledge, transfer information and share skills and expertise (Byrne, Brandt and Port 1993). In addition, organizations today are more sensitive to changing customer expectations. They are trying to differentiate through ideas, knowledge, experience and capability of delivering a complete product and service adapted to their customers' needs. Thus, they do not only focus on today's products or functions but also on new functions, products, customers, distribution channels, regions and processes. They are more focused on innovation. In order to innovate more and faster than competitors, organizations are applying management by objectives (MBO) and self-control by creating a values-driven culture, as well as, trusting and empowering more people in the organization to think and execute (Laloux 2014, p.26). Furthermore, most of organizations have realized that capabilities, skills and knowledge are the most valuable capital. Thus, they have directed their attention towards organizational learning; knowledge collection, development and distribution. They have begun to focus on experimentation with new approaches, learning from others and their own experiences, and reflecting on new knowledge (Garvin 1993). Therefore, they have built an organizational culture with supporting learning environment, concrete learning processes and practices, and leadership behaviors that reinforce learning (Garvin, Edmondson and Gino 2008).

In summary, the past organizations had traditional structures to sustain mechanistic mass production industries whereas the main idea behind present contemporary structures is to drive innovation, efficiency and growth by developing greater dynamism, flexibility, agility, adaptability, sensibility and responsiveness in a business environment changing at a rapid pace. Moreover, these new emerging forms offer insights for organizational design and change, and they are the influencers for future organizations.

2.2 SELF-MANAGED ORGANIZATIONS

2.2.1 Emergence

As mentioned in the previous section, organizations have gone through several stages until today and have experienced different ways of collaboration in organizational settings. These stages and collaboration ways have brought about new organizational models along with new breakthroughs. Organizations in the past had a pure hierarchy and running like almost a machine. Division of labor, top-down command and control, formal roles, stability and processes with long-term perspectives were building blocks of these structures. Organizations have begun to change rapidly over time with the effect of globalization and technological advances. Competition and continuous growth have become very important, resulting in innovation to become essential for staying ahead. In recent years, many organizations have developed further. They have begun to move away from mechanistic structure and approached to a structure like family. These contemporary organizations have created values-driven cultures and used stakeholder models. Moreover, they have developed an employee-focused perspective and begun to work on the ways how to eliminate the conventional roles and provide fairness, equality, harmony, and consensus in the work place; which are essential to be a well cooperated community (Laloux 2014, p.30). They have focused on empowerment and supported servant leadership to achieve employee motivations. In other words, managers in these organizations are encouraged to understand their subordinates and to empower, motivate and develop them (Laloux 2014, p.32).

Several organizations today have contemporary organizational models in theory. However, many of them have not been able to get away too much from classic pyramid structure in practice. Even in the most modern structures, employees still depend on command and control on what to do while they are free how to do their works. The multi-tiered management structure increases the risk of difficult, large decisions and causes slower responses. Besides these hierarchy related issues, these modern organizations are still trying to deal with the most common organizational challenges like inefficiency, lack of motivation, and huge management costs. Employee

engagement, motivation and contribution are very low at the bottom of the pyramid where employees are disempowered (Gallup, Inc. 2013). The situation is similar for the ones at the top too. Competitive behavior of the organizations makes managers egocentric (Schachter 2012), and therefore, they become quite busy with the power games and the politics (Laloux 2014, p.4) rather than management tasks. Moreover, many organizations still have boundaries and it is difficult for them to overcome task, identity, authority and political boundaries (Hirschhorn and Gilmore 1992). In conclusion, many modern organizations today are suffering because of fears, personal ambitions, egos, mistrust, greed, politics, bureaucracies in processes and information flow, lack of authenticity, inefficiency, lack of motivation and engagement, endless and inconclusive meetings, to name a few.

Some people, on the other hand, have begun to argue that these are the signs for change and it is time to access a new stage of consciousness and a new world-view to reinvent the organizations and management (Ross (2014), Murray (2010)). According to Murray (2010), the new model should bypass corporate hierarchies by pushing power and decision-making down the organization as much as possible and should become more team-based. In his book, Laloux (2014, pp.43-60) comes to the same conclusion. He uses the term “Teal Organizations” as the next stage of organizational consciousness (2014, p.43) and states that self-management is the first major breakthrough of these organizations (2014, p.56). He claims that organizations should go beyond empowerment with self-management in order to deal with the fears of the ego (2014, p.50) and the problem of power inequality (2014, p.62) which are the main reasons for inefficiency of today’s organizations.

Many organizations have already begun to adapt self-management into their structures. In these organizations, hierarchy has disappeared. They have moved all the levels of hierarchy into self-managing teams enabling team members to make all the major decisions within the organization. In this manner, they have made each team and each person in the team much more integral by allowing them to operate on any level in the hierarchy they are capable of, where previously they had been constrained by their place in the pyramid. As a result, they have gained success with increased employee

motivation, engagement, and performance (Zetlin 2014). Some examples for these companies are W.L. Gore & Associates, Morning Star, Valve Corporation, Zappos.com, Semco Partners, Crankset Group, and Menlo Innovations among others. Their success stories are explained briefly in the following sections.

2.2.1.1 W.L. Gore & Associates

W.L. Gore & Associates, which is an American manufacturing company specializing in products derived from fluoropolymers, is one of the pioneers of self-managed organizations. It has been functioning without managers since the 1960's (Gore.com [no date]). With its more than 10000 employees and a revenue of \$3.1billion (Great Rated! 2015), it is named on "2014 World's Best Multinational Workplaces" list (Bowman 2015) and ranks consistently in the top tier of Fortune's annual list of "100 Best Companies to Work For" (Wehner 2015).

2.2.1.2 Morning Star

Morning Star, the world's largest tomato processor, is another pioneering company with its remarkable model of managing without managers. It has no hierarchy, no job titles, no promotions, and no managers (Stevenson 2014). It has had this concept for over two decades, becoming a global market leader with 2010 revenues of over \$700 million and double-digit growth in an industry with an annual growth rate floating around 1 percent (LaBarre 2012). It handles between 25 percent and 30 percent of the tomatoes processed each year in the United States (Hamel 2011).

2.2.1.3 Valve Corporation

Valve Corporation, a video gaming company, has no managers, no assigned projects, no corporate hierarchy, and no bureaucracy since its founding in 1996 (Valvesoftware.com

[no date]). It has an enterprise value at about \$4 billion with its 400 employees (McKendrick 2013). According to its new employee handbook (Valve Handbook for New Employees 2012, p.27), its profitability per employee is higher than Google, Amazon, or Microsoft.

2.2.1.4 Zappos.com

Zappos.com is the number one online shoe seller with over \$1 billion in annual sales (WorldBlu 2015). It was established in 1999 and, by the end of 2014, it has completed the transition from traditional organizational structure to holacracy, which is a self-management approach relying on a structure of nested teams with no job titles and no managers (Denning 2014). It has been recognized as one of Fortune's "100 Best Companies to Work For" six years in a row since 2009 (Fortune 2015) and named on 2014 "The WorldBlu List of Most Democratic Workplaces" list (WorldBlu 2015).

2.2.1.5 Semco Partners

Semco Partners, a 3000-employee Brazilian company founded as a centrifuge manufacturer in the 1950s, is now in the service sector, including environmental consultancy, facilities management, real estate brokerage, and inventory support (Semco Partners [no date]). After Ricardo Semler took over the management from his father in the 1980s, he applied self-management and achieved great successes (Bock 2005). Under his ownership, revenue of the company has grown from \$4 million in 1982 to \$35 million in 1994 and \$212 million in 2003, with an annual growth rate of up to 40 per cent a year. During the recessionary period in Brazil, Semco could manage to increase revenues by 600 percent, profits by 500 percent and productivity by 700 percent (Blakeman 2014).

2.2.1.6 Menlo Innovations

Menlo Innovations, a software company with 50 employees, also has a manager-less culture with almost no hierarchy (Blakeman 2014) where all employees work in pairs at long tables in a big, open office coding and designing computer programs (Hu 2013). In Menlo, it is not the chief executive officer (CEO), the team who takes charge of budgeting, hiring, firing and making decisions on how to serve the company's clients. Founded in 2001, it has reached annual revenue of \$3.6 million by 2013 (Buchanan 2013). It is one of the companies named on 2014 "The WorldBlu List of Most Democratic Workplaces" list (WorldBlu 2015).

2.2.1.7 Crankset Group

Crankset Group, founded by Chuck Blakeman in 2007, has grown 704 percent with a few employees in the last five years (Blakeman 2014). At Crankset, employees are all committed stakeholders in self-managed work teams (Crankset Group [no date]) and they are free to lead in their area of expertise.

2.2.2 Culture and Work Environment

Self-managed organizations have flat structures with few or no middle management in order to eliminate the issues resulted from the use of position, power and authority thoughtlessly (Kirkpatrick 2011, p.27). These organizations are composed of self-managing teams. In order to succeed, they focus on the functioning of teams rather than individual works; give valuable tasks, freedom and enough responsibility to teams; eliminate any tensions and conflicts among teams; and have shared and supportive leadership rather than traditional supervision (West and Markiewicz 2003, pp.6-8).

In self-managed organizations, people are behaved as true professionals. Thus, instead of using the term "employee", most of these organizations favor to use the terms such as

“associate” (Roberts 2015), “colleague” (Hamel 2011), “peer” (Valvesoftware.com [no date]), “partner” (Holacracy.org [no date]), or simple roles defined by individuals.

These organizations depend on keeping commitments and no use of force, and there exist no formal job titles and no command authority, including the unilateral authority to dismiss in these organizations (Kirkpatrick 2011, pp.27-49). People in these organizations trust each other and help each other’s professional growth by providing continuous feedback with a coaching approach. They take multiple roles and gain various skills while doing a wide variety of tasks. Moreover, they are free to perform their jobs according to their own decisions.

On the whole, a self-managed culture and work environment has four main characteristics, namely, skill variety, autonomy, feedback and trust. They are explained in details in the following sections.

2.2.2.1 Skill variety

In self-managed organizations, people generally do not have fixed job descriptions and job titles. Instead, they have fluid and granular roles which are created organically in case a new issue or opportunity arises. Teams are considered as business units where team members think as professional businesspeople all the time when making a decision and conducting their tasks (Kirkpatrick 2011, p.94). Thus, people are enabled to take multitude roles and responsibilities based on their interests, talents, and the needs of the organization. In addition, people are allowed to trade roles within a team (Laloux 2014, p.122). Moreover, most of the staff functions such as hiring, planning, scheduling, controlling, budgeting, purchasing, and accounting are performed by teams themselves directly or by allowing team members to take voluntary task forces instead of having excessive amount of central departments. These responsibilities are typically rotated among team members.

This approach has brought about a culture where all the employees gain a great deal of skills and take place at the same level within the organization. Enabling team members to learn and use various skills reduces boredom and monotony, and therefore, increases motivation (Hackman and Oldham 1976) and engagement. Moreover, this system increases the efficiency within the organization due to the fact that it creates a huge sense of flexibility, freedom and responsibility throughout the organization by allowing the team members to substitute for each other and to make decisions themselves in all areas.

2.2.2.2 Autonomy

Self-management depends on the idea that no one knows more about a job or a process better than the person responsible for it (Kirkpatrick 2011, p.65). According to this concept, it is not possible for a manager to know about a process as much as the person executing it and to make better real-time decisions about that process. In other words, decisions made by employees are more effective because they're made by the people who have the most information relevant the job. This concept suggests going beyond empowerment by making everyone powerful in their interests (Laloux 2014, p.62) instead of concentrating it at one person and enabling this person to transfer power to others. Thus, self-managed organizations have a structure based on freedom where people are free to perform their jobs in the best way they can do according to their own understanding, free to innovate new ways to perform their jobs even better and free to change their jobs in order to meet the needs of the organization (Kirkpatrick 2011, pp.33).

In these organizations, people have a complete autonomy over their tasks and they are enabled to make any decision within the scope of their specific purposes, involve in the process of defining purpose and strategy, execute their jobs without supervision of a manager, and coach each other. Important decisions are made by taking advice from team members, and therefore, the whole team feels responsible for the decision rather than a single team member. Autonomy allows team members to handle variable work

conditions, task and environmental demands effectively by making decisions while doing the work (Cohen, Ledford & Spreitzer 1994, p.5). Moreover, it creates a sense of responsibility, increases engagement and motivates team members on their performance (Hackman and Oldham 1976).

2.2.2.3 Feedback

Self-managed organizations are workplaces where many issues including performance and outcomes are discussed and solved foremost at the team level. Thus, it is essential in these organizations to seek out and share feedback frequently in order to get a meaningful reflection of personal contribution of team members to the organization's purpose (Laloux 2014, pp.125-126). In these organizations, team members are encouraged to exchange feedback with each other and other organization members, and to understand the outcomes collectively (Kirkman and Rosen 1999). Feedback enables team members to observe the results of their work activities and take necessary actions when needed, which motivates and help them stay engaged in their works (Cohen, Ledford & Spreitzer 1994, p.5).

2.2.2.4 Trust

In self-managed organizations, there exists no command authority and usual control mechanisms (Kirkpatrick 2011, pp.27-49). For this reason, these organizations depend highly on mutual trust. Employees are seen as fair and sensible people that can be trusted to do the right thing. They set their own team objectives, decide their roles and commitments to each other within the team and hold each other accountable for mutual commitments (Laloux 2014, p.321). They trust each other and keep their commitments (Laloux 2014, pp.80-83). Trust brings responsibility and accountability, which regulates the system better than the formal control mechanisms existing in traditional hierarchies. Moreover, it increases employee performance, productivity, profitability, creativity, innovation, motivation, and employee engagement (Russell 2012).

2.2.3 Organizational Structure

Self-managed organizations have a form of flat organization that has a structure with few or no middle management between employees and executives. This organizational model supports employee involvement through a decentralized decision-making process. Thus, comments and feedback reach all employees involved in decisions more quickly; and expected response to customer feedback and changing conditions becomes more rapid.

Self-managed organizations are composed of self-managing teams organized in different ways to fit the context they operate in without the need for a middle manager or supervisor above the team. These teams are responsible and accountable for all or most aspects of producing a product or delivering a service. They have the autonomy to make the most critical decisions about the work. Moreover, they conduct supporting tasks, such as planning and scheduling the workflow and managing annual leave and absence, in addition to technical tasks. Management and technical responsibilities are typically rotated among the team members. Although these organizations are fluid, and the teams form depending on the changing conditions and the characteristics of the work they are responsible for, there are three broad types of structure, namely, parallel teams, commitment web, and holacracy (Laloux 2014, pp.319-322). The details of these structures are explained in the following sections.

2.2.3.1 Parallel teams

In this model, teams are allocated in a way that they do not need too much coordination across teams. The reason for this lies in the processes that enable works to be broken down independently allowing teams to have a high degree of autonomy. Team members define their roles according to team's goal and they are responsible to each other. There are no staff functions in this structure, therefore, besides work-related tasks; teams are also responsible for defining and executing their own plans, tracking their results, identifying their investment needs and budget, hiring and recruitment, determining their

training needs, to name a few (Laloux 2014, p.320). However, they occasionally need external team coaches to overcome difficult problems or supporting roles to execute some staff functions. This model, along with a few supporting teams, is suitable for large organizations with short value chain (Laloux 2014, p.323).

FAVI, which is a French copper alloy manufacturing company and the European leader in gearbox forks manufacturing (Bry 2014), has been functioning with parallel teams since thirty years (Bry 2013). It has structured its factories in various self-managing mini-factories of 10 to 40 people, each dedicated to a customer rather than a manager, in order to improve teams' reactivity and flexibility (Bry 2013).

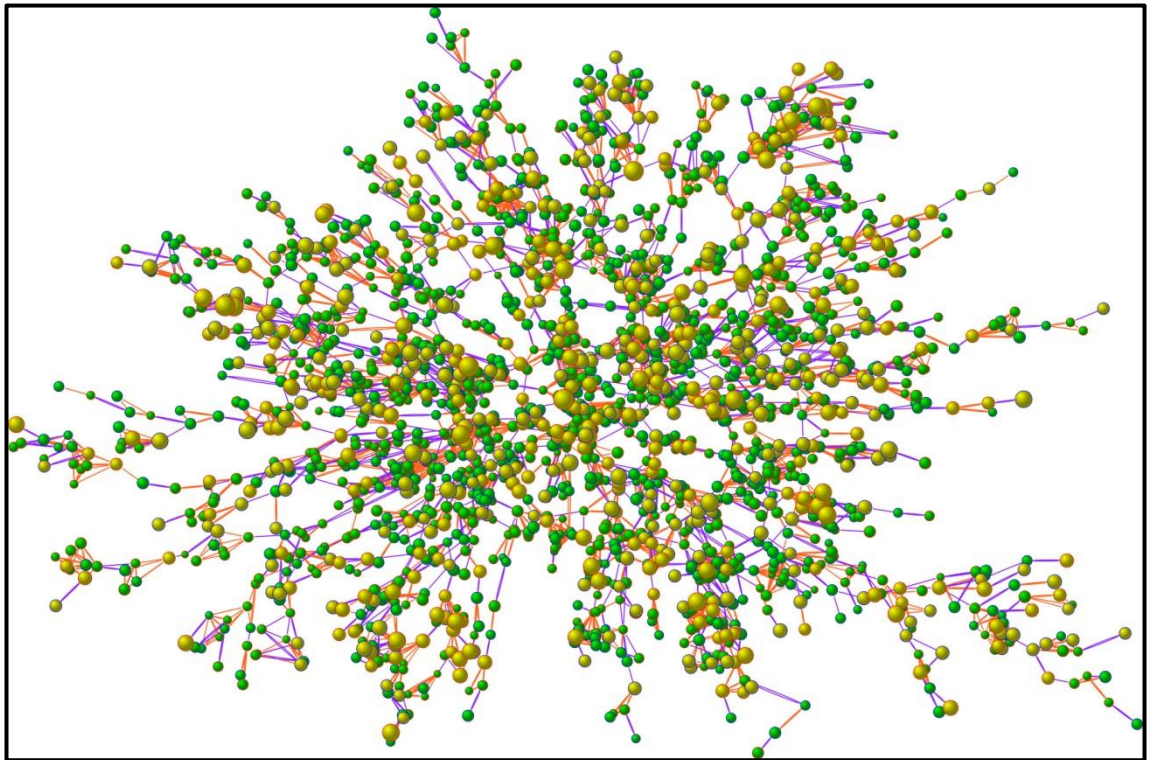
2.2.3.2 Commitment web

In this model, some processes such as setting and discussing goals, investment budgets, and financial results are done in teams or work units as in parallel teams whereas roles and commitments are discussed between peers or colleagues who work closely together (Laloux 2014, p.320-321). These one-on-one discussions are formalized in a written document. Employees are responsible to their work units as well as the members of other teams forming a web structure. This model is suitable for large organizations with long value chain where processes are continuous and relatively stable (Laloux 2014, p.324).

Morning Star has this structure. All employees have their own mission statements completely aligned with the enterprise mission and they are responsible for achievement of their individual missions and for acquiring all the necessary training, resources, and cooperation to fulfill those missions (Gino and Staats 2014, p.6). In addition to individual mission statements, employees also establish a document called "Colleague Letter of Understanding" (CLOU) annually and negotiate it with the colleagues who will be most affected by the proposed work (Hamel 2011). This document is a colleague accountability agreement and serves as an operating plan for fulfilling the individual missions. CLOUs contain individual missions, process accountabilities, key

performance indicators (KPIs), and decision rights among CLOU colleagues. An employee negotiates with 10 or more colleagues during developing a CLOU, with each discussion lasting about 20 to 60 minutes (Gino and Staats 2014, p.7). At the end of this process, almost 3000 formal relationships are established among employees (Hamel 2011). Figure 2.1 illustrates the web of commitments at Morning Star.

Figure 2.1: Web of commitments at Morning Star



Source: <https://thesituationist.wordpress.com/2008/03/03/social-networks/>

2.2.3.3 Holacracy

Holacracy is an organizational structure based on nested teams and clearly defined roles. In holacratic systems, individuals have full authority to decide their roles and commitments to each other within the team (Laloux 2014, p.321), and make any decision within the scope of their specific purposes. In this structure, there is no hierarchy of people or power, there is hierarchy of circles. A “circle” refers to a group of roles which can be broken down into sub-circles or sub-roles so that multiple people

can work together to accomplish the circle's overall purpose and accountabilities (Holacracy.org [no date]). Each sub-circle has representatives who attend tactical meetings to ensure that all the concerns are known and actions are taken within the organization (Holacracy.org [no date]) resulting in a structure that allows complex purposes to be broken down into smaller parts through a hierarchy of purpose, complexity, and scope, without a hierarchy of people or power. This structure is most suitable for large organizations with long and deep value chains (Laloux 2014, p.324).

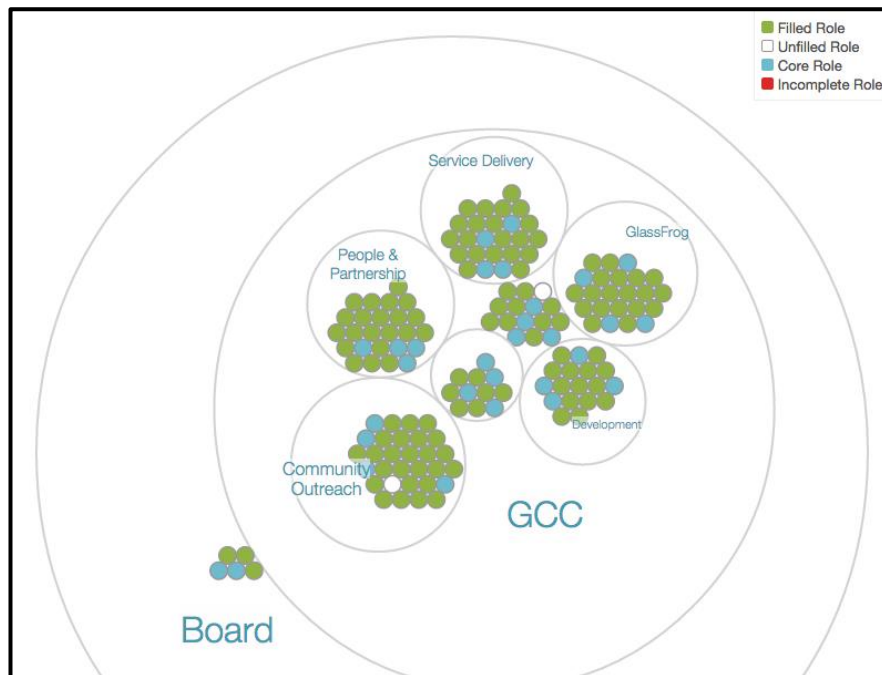
There are more than 300 organizations in the world functioning with holacracy. Zappos is the largest one, with its 1500 employees, that has implemented holacracy (Groth 2013). It has removed the job titles, management positions, and moved hierarchy into 400 circles with 1499 partners (Sweeney, C. and Gosfield, J. 2014). Medium, which is a content platform founded by Twitter co-founders Evan Williams and Biz Stone (Warren 2012) in August 2012, is also one of the adopters of holacracy. They have several nested circles whose members have a purpose that adheres to overarching circle's purpose, which connects to the company's purpose (Firstround.com [no date]). Individuals can hold multiple roles in more than one circle throughout the company. If a role contains too much works, it can develop into a circle organically with multiple members to handle the excessive workload.

Figure 2.2 and 2.3 show holacratic organizational structure and work cycle respectively.

2.2.4 Leadership

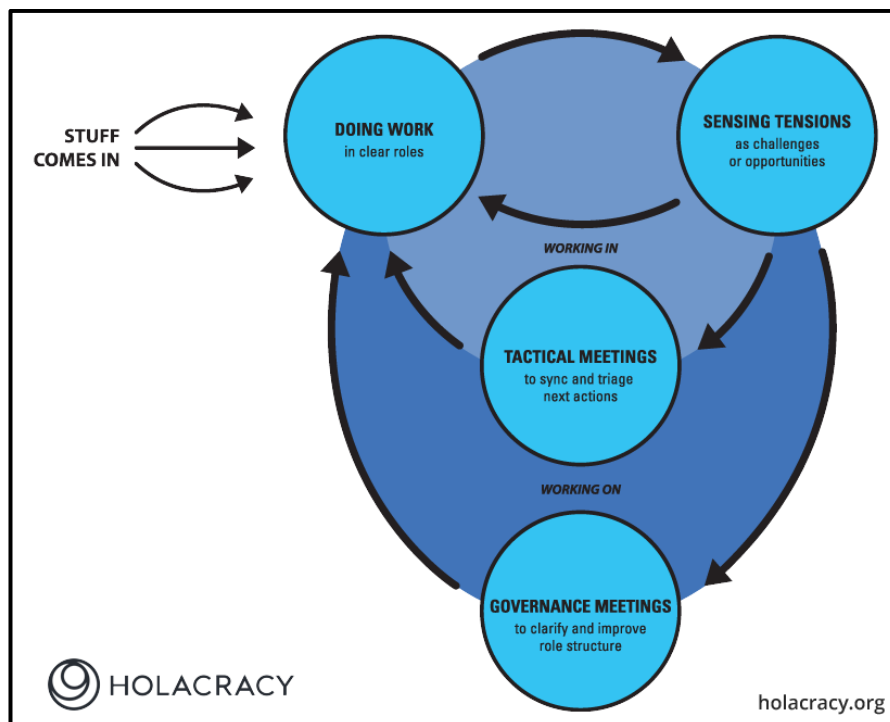
In self-managed organizations, teams manage themselves depending on shared leadership processes. They collectively perform activities based on task and social processes such as defining projects, scheduling, gathering resources, developing coherence, establishing effective communication, developing their performance standards, conducting self-evaluations, and self-regulating their behaviors at work, which are the fundamentals of self-management. Thus, leadership is essential in self-managed organizations more than other organizational structures (Barry 1991).

Figure 2.2: Holacratic organizational structure



Source: holacracy.org

Figure 2.3: Work cycle in holacracy



Source: holacracy.org

However, leadership in these organizations differs from traditional leadership. It depends on expertise instead of position, title, or influencing employees to achieve organizational goals. In other words, only a person with the most expertise on a particular problem or situation gains a position of leadership, creating followers naturally (Kirkpatrick 2011, p.91). Thus, leadership positions in self-managed organizations rely highly on situations. If a problem arises, a person with the most ability to handle the situation becomes leader until the problem is resolved. This dynamic leadership form enables people to learn from each other without feeling the pressure of any hierarchical power, and to create numerous leadership styles that work successfully.

The leaders in self-managed organizations are not members of the teams and their roles are not solving the issues. Leaders are facilitators in these organizations and the role of a leader is to share expertise and help the employees to lead themselves effectively by encouraging constructive employee self-management behaviors (Manz and Sims 1987). Thus, leaders should have some leadership behaviors (Manz and Sims 1987) which are explained below.

- i. Encourage rehearsal: Leader encourages team to practice an activity before performing it.
- ii. Encourage self-goal-setting: Leader encourages team to set its own performance goals.
- iii. Encourage self-criticism: Leader encourages team to be self-critical and to discourage low team performance.
- iv. Encourage self-reinforcement: Leader encourages team to recognize and reinforce high team performance.
- v. Encourage self-expectation: Leader encourages team to have high expectations for team performance.
- vi. Encourage self-observation/evaluation: Leader encourages team to gather the information required to monitor and evaluate its performance.

Self-management leadership creates more autonomy experiences and increases team performance by allowing team members to decide which goals to set and how to perform in order to reach goals (Manz and Sims 1987). Moreover, team members find the goals more meaningful, complete challenging assignments and experiences impact and autonomy in their work since they take on responsibility and participate in goal-setting (Hackman and Oldham 1976).

Coaching and mentoring culture in these organizations also supports self-management leadership behaviors. Employees help each other's professional growth by providing feedback to each other with a coaching approach. Most of the self-managed organizations have formal mentoring programs for new employees allowing experienced organization members to help them understand their roles and organization culture (Kirkpatrick 2011, p.64). This supportive culture helps people become more effective, assists self-management, and leads it to develop further.

W.L. Gore & Associates, as the other self-managed organizations, has implemented this unique leadership culture. The leadership style at this company is referred as "Natural Leadership" (Manz, Shipper and Stewart 2009). The leaders at W.L. Gore emerge based on their knowledge, skills, enthusiasm, and ability to attract followers rather than formal authority. A person should obtain reputation by demonstrating special knowledge, skill, or experience through a series of successes, and by involving others in significant decisions in order to be a future leader. The leadership culture at W.L. Gore is focused on people and favors shared responsibility and influence, teamwork, development of team members, and social relationships (Manz, Shipper and Stewart 2009). W.L. Gore also supports its leadership culture with mentoring system which is called sponsorship (Kirkpatrick 2011, p.115). New employees are assisted by sponsors for a certain time to help them understand the main principles of self-management and fulfill their mission. Sponsors are selected among experienced employees who have the ability to convey trust and confidence, and to whom people consult for support frequently. Their roles include coaching, mentoring, representing, and advocating which are crucial for promoting W.L. Gore values and principles.

Semco Partners also have a mentoring program for entry-level new hires, which is called “Lost in Space”. It allows people to decide where to work and what to do in the organization. Within this program, the new hires, who have no job description, are required to work in at least 12 different areas or work units in their first year and negotiate for possible jobs that they believe fit their goals and personality. They are assisted by a mentor called “godfather” (Semler 1989) during this process.

2.2.5 Practices and Processes

2.2.5.1 Decision-making

Decision-making in self-management is fully decentralized. It entirely depends on advice process. According to this process, employees are free to make any decisions as long as they seek for advice from all affected people and subject matter experts within the organization (Laloux 2014, p.100). Although they do not have to integrate all the advices, they must take them into consideration seriously. All employees affected by the decision have right to give advice, however, they do not have power over others. The number of people involved in this process depends on the magnitude and importance of the decision. The CEO or board of directors might be also included in this process when necessary. However, decision is made by the person who has noticed the issue or opportunity, or the person most affected by it. This aspect of advice process, along with the responsibility to implement the decision, distinguishes it from consensus.

There is no formal way of seeking for advice. People might come together in one-on-one discussion or group meetings. In case a decision affects a large number of people, input is collected by means of email, intranet or enterprise networking platforms.

In self-managed organizations, purchasing and investment decisions are also made based on advice process. There are no authorization limits and procurement departments. Employees are allowed to spend any amount of money as long as they have sought the necessary advice prior to making the decision (Laloux 2014, p.106).

The decision maker is responsible for all purchasing and procurement processes including doing analysis, defining specifications, preparing budget, finding suppliers and negotiating with them, and making the investment.

Advice process in decision making has several benefits. Firstly, the person whose advice is to be taken feels honored and needed. Secondly, this process enables the decision maker and the adviser to have a closer relationship. Thirdly, decisions are made more rapidly within this process and it increases the chance of reaching the best decision since the decision is made among the people closest to the issue. Fourthly, it enables organizations to respond better to changing business environment. Finally, it stimulates initiative and creativity.

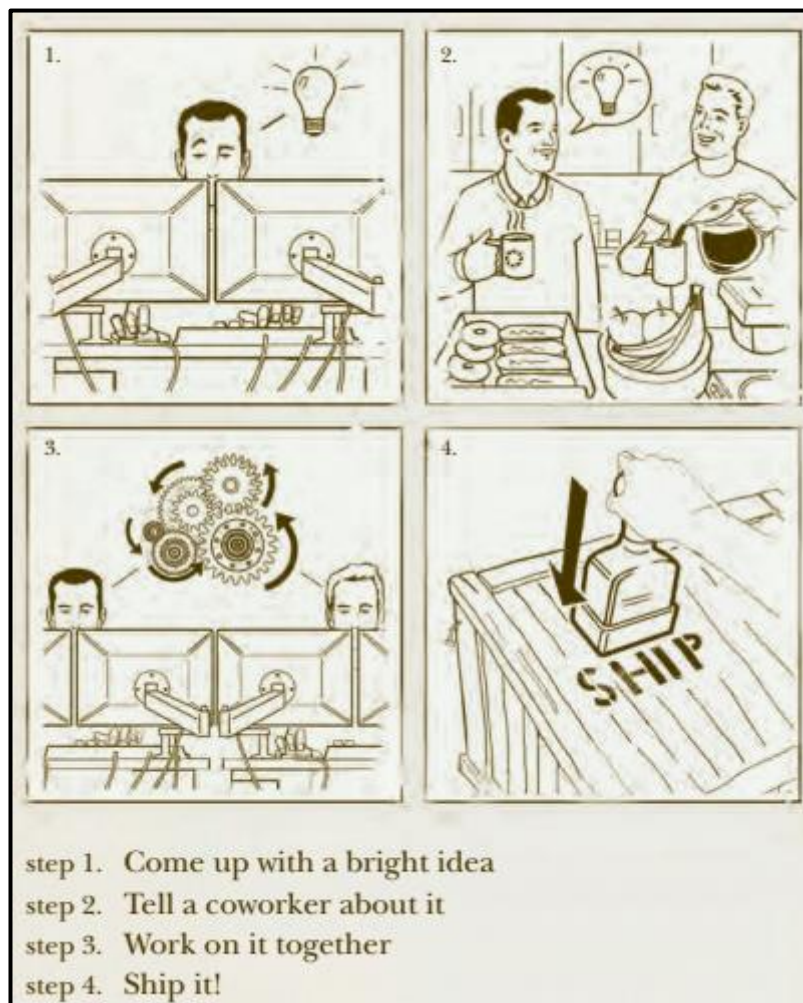
Some self-managed organizations such as Morning Star and Holacratic organizations have formal decision-making processes. At Morning Star, for example, decisions rights are allocated on CLOUs as part of the agreement by giving the person with the greatest expertise more decision-making authority (Kirlpatrick 2011, p.93). This person, however, have to collaborate with fellow colleagues, who have relevant information about the topic, while making the decision.

Holacracy has regular governance meetings where circle members, rather than one person, make decisions according to a formal process which is called “Integrative Decision-Making Process” (Holacracy.org [no date]). This process consists of six stages. First, the proposer states an issue or opportunity and his proposal to address it. Second, participants ask questions to seek information or understanding. Discussions are not allowed at this stage. Third, participants react to the proposal without debate. Fourth, the proposer clarifies further or revises his proposal. Fifth, objections are stated and captured without discussion. Finally, objections are discussed and integrated, and the proposal is revised several times to reach the ultimate decision.

Organizations such as Semco Partners and Valve Corporation, on the other hand, have informal decision-making mechanisms. Semco Partners favors participatory management in decision-making. Employees are asked to vote on major decisions that

affect the entire company (Semler 1989) while they have the authority to make any decision about their regular works. Employees at Valve are also encouraged to share their ideas with colleagues freely. If an idea is found valuable and attracts the attention of others, it is turned into a project. Figure 2.4 illustrates decision-making steps at Valve.

Figure 2.4: Decision-making at Valve



Source: Valve Handbook for New Employees 2012, p.22

2.2.5.2 Coordination

Coordination, communication and knowledge exchange happen informally in self-managed organizations. All the employees have the authority to discuss everything with others regardless of a specific area or process. Moreover, there are no executive team meetings in these organizations since hierarchical structures have disappeared and the lines converge within teams. Meetings that require participation of functional managers at every level are held at team level in those organizations. Instead of regularly scheduled meetings as in the traditional structures, teams hold short ad hoc meetings with relevant people when a problem or opportunity arises (Laloux 2014, pp.76-80). Regular meetings are only held to make important decisions about orders, investments, workloads, task forces, to name a few. In case of a need for a more permanent coordination, teams form a staff function or appoint a volunteer person for a staff role in order to coordinate across teams, without having any authority over others. In respect of the knowledge exchange, most of self-managed organizations implement enterprise social networking platforms which enable employees to post questions or share ideas directly (Laloux 2014, pp.79-80). These platforms are very effective in speeding up communication and promoting collaboration amongst employees.

Semco Partners promotes open meetings which are interactive and help employees understand an issue or a project better. The purpose of these meetings is to develop more effective actions on subjects. All employees are authorized to set meetings about an idea or issue. The chair person in these meetings is the one that know the most about the subject being discussed. Employees, who have a vested interest and something to contribute, attend these meetings and discuss with each other. These meeting enable idea exchanges without any communication barriers.

2.2.5.3 Information flow

In self-managed organizations, openness is one of the important aspects of corporate culture. In order to make the best decision, self-managing teams need to have all

available information. Moreover, sharing information entirely is essential to avoid suspicion and reemerge of informal hierarchies. In self-managed organizations, therefore, all information is available to all employees, including the most sensitive data such as company financials, salaries, performance and productivity of individual teams, to name a few (Laloux 2014, p.110). New and important information such as quarterly results and changes in strategy is generally shared in open meetings where information is discussed and debated. These organizations use their intranet to share all the information in real time without any restriction of access so that all the employees can consult any data at any time. They also organize training courses for their employees to teach them how to read and understand the number (Semler 1989) in order to have the ability to analyze all data they encounter within the organization.

2.2.5.4 Conflict resolution

In self-managed organizations, disagreements are resolved among employees using a conflict resolution process. This process is one of the essentials of self-management practices. Employees hold each other accountable for mutual commitments through this process. Thus, many self-managed organizations train new recruits in conflict resolution.

Most of the self-managed organizations have multi-step conflict management processes. First of all, employees are encouraged to directly discuss the issue with each other. If the issue cannot be resolved in the one-on-one discussion, the peers appoint a trusted peer as mediator. If mediation fails, they convene a panel of employees who are relevant with the issue. If the conflict cannot be resolved yet, the CEO might be asked to mediate the panel in the final stage.

The conflict resolution process at Morning Star is formalized and called “Direct Communication and Gaining Agreement” (Laloux 2014, p.113). This process also consists of three stages: first a one-on-one discussion, then mediation by a trusted peer, and finally mediation by a panel. In case an employee notices issues related with CLOU

commitments, performance, integrity, values and principles, or any work-related issue with another colleague, they have to directly discuss the issue with each other at first stage (Kirkpatrick 2011, p.30). At this stage, they privately discuss the issue keeping it confidential. The initiator makes a request and the other colleague either accept or reject it, or respond with a counterproposal (Hamel 2011). If they cannot resolve the issue, they agree to discuss the issue with one other colleague who is trusted by both of them. The colleague acts as an internal mediator and supports them in finding agreement. However, the mediator does not have any power to resolve the issue. The parties present their views and the mediator articulates their thoughts about the points being made on both sides, keeps the discussion on track, and makes sure that both colleagues continue to discuss the relevant facts and stay away of personalities. If they still cannot agree on a solution, a panel of three to ten topic-relevant colleagues is assembled (Morning Star [no date]) to listen to both sides and this panel stays in the conversation until the conflict is resolved. The panel does not have authority to impose a resolution. Instead, it helps parties reach an agreement. If this stage also fails, which is very rare, the parties agree to discuss the issue with president of the company.

As explained in previous chapters, W.L. Gore & Associates has implemented a unique leadership culture to support self-management. Communication is the most essential element of this culture. Thus, each Gore associate is trained in effective interpersonal communication. All associates attend Leadership Effectiveness Training (LET) during their orientation to learn problem solving and conflict resolution techniques (Kirkpatrick 2011, p.116), as well as leadership styles, relationship building, how to collaborate and cooperate. This training program helps associates find constructive solutions issues before they escalate. Furthermore, sponsors have an important role in resolving issues between associates. They mentor associates appropriately until the conflict is resolved and document it if it is encountered for the first time.

2.2.5.5 Role definition and allocation

In self-management, people have fluid and granular roles instead of fixed job descriptions and job titles. Roles are created organically when someone realizes a new issue or opportunity. Role creation in self-managed organizations is done either formally or informally depending on the organization culture (Laloux 2014, p.115). In organizations composed of self-managing project teams, such as Valve, this process is quite informal. However, in organizations with continuous processes, such as Morning Star, roles are defined and allocated based on formal procedures.

At Morning Star, roles are discussed and determined annually in a series of one-on-one discussions according to personal mission statements, and documented in CLOUs (Laloux 2014, pp.115-116). Employees might have twenty to thirty different roles and they define responsibilities, authorities, and KPIs for each role in CLOUs. The details of the roles are defined based on the discussions and negotiations between employees who are in close relationship.

In holacratic organizations, roles are created, adapted, amended or discarded by team members in governance meetings. In case a new issue or opportunity emerges, it is discussed in a governance meeting and creation of a new role or adaptation of an existing one might be proposed. The proposal is evaluated in six steps through decision-making process to make the final decision concerning the role. A number of changes of roles can be made in a single meeting.

Roles at Valve Corporation are also fluid. However, there is no formal process for role definition and allocation. People do not have job titles and they take on roles depending on the works they are doing (Valve Handbook for New Employees 2012, pp.36-37). They are encouraged to question each other's works, create new roles and recruit accordingly. The details of the roles are defined among team members based on the project they are involved in.

Roles can be traded within a team in self-managed organizations since people are capable of handling many different roles at the same time. Thus, a person who wants to acquire new skills or who has excessive workload can ask colleagues to trade roles temporarily or permanently (Laloux 2014, p.122). This flexibility of trading roles increases the efficiency of teams in self-managed organizations.

2.2.5.6 Project management

Project management is simplified in self-management. Projects are managed organically and informally without control of any authority or project manager. Project teams form spontaneously and team members take their own staffing responsibility (Laloux 2014, p.84). These team members take roles in several projects at the same time and constantly rearrange their priorities according to importance and urgency. They do not spend too much time on traditional project management phases and processes such as planning, approval, and control. They trust collective intelligence of self-management and conduct their tasks with minimum use of time and budget plans.

Project management in holacracy is more formal compared to other self-management structures. In holacratic organizations, roles' accountabilities depend entirely on projects. Project team members prioritize their projects according to importance and entitle the focused one as "Current Project" (Holacracy.org [no date]). Moreover, they identify the actions for each project and call them as "Next-Actions" (Holacracy.org [no date]). They are responsible for tracking their projects and next-actions in a database accessible by all team members, keeping them up to date, and changing the focus of continually based on the priority of the projects or next-actions. Thus, there exists no role for project managers in these organizations.

Valve Corporation has gone further in fluid project management. At Valve, employees are encouraged to communicate informally in order to learn about ongoing projects and each other (Valve Handbook for New Employees 2012, p.10). They voluntarily join with others to collaborate on new projects in which they are interested. Project teams,

which are called “Cabals”, form organically, with a volunteer leader and form a temporary internal structure (Valve Handbook for New Employees 2012, pp.15-16). Roles are fluid and defined among team members according to requirements and the goals of the projects teams (Valve Handbook for New Employees 2012, p.16). Moreover, the office design at Valve supports its unique project-based structure. Desks are designed with wheels to facilitate mobility, which enables employees to move around easily to form project teams (Valve Handbook for New Employees 2012, p.6). People move their desks to a new place continually, depending on the projects they participate. Since people change their places quite often, the company has created an application on its intranet which provides a map of the office showing the location of everyone based on where they have plugged in their computers (Valve Handbook for New Employees 2012, p.6).

2.2.5.7 Performance management

Self-management focuses on team performance. Unlike other structures, teams do not need pressure from above to have good results in self-managed organizations due to the fact that people have decision-making power and the resources to work for meaningful individual purposes that are aligned with organization’s overall purpose (Laloux 2014, pp.123-124). Nevertheless, people need to see the results of their activities and evaluate them. Thus, self-managed organizations measure indicators such as team results, productivity, and profit at team level. In some self-managed organizations where teams perform similar tasks, results are shared publicly within the organization in order to let teams compare their results with each other and find how to improve. In other self-managed organization where teams do not have comparable works, on the other hand, the results are shared only within team. At individual level, performance management in self-management depends on continuous feedback. (Laloux 2014, p.125). People in self-managed organizations need to seek feedback about their individual performance and they are encouraged to exchange feedback frequently. Thus, they hold no formal appraisal discussions or have peer-based appraisal processes for individual performance management. The aim of peer-based appraisals is to get a more meaningful reflection of

personal contribution with more input from more peers, and to define needs and develop further.

Morning Star has a formal performance management process at both team level and individual level. At the end of every year, employees receive feedback from their CLOU colleagues (Hamel 2011), according to their commitments and KPIs stated in CLOU and every year in January teams present their performances to a group of colleagues including the president of the company (Laloux 2014, p.125). They are required to evaluate themselves, justify their performance over previous year and use of the company's resources, and present their plan for the next year. Their performances are questioned and ranked by their colleagues (Hamel 2011). This process lasts for about one month and eventually, teams receive enough input from their colleagues to perform better.

Valve Corporation has a formalized peer review process. Although employees are free share information about each other's performance all the time, once a year, a group of employees forms a committee and interviews everyone in the company (Valve Handbook for New Employees 2012, p.26). They ask each employee how the ones they have worked with have executed their tasks since previous year. After it is gathered, all the feedback is combined in proper order, anonymized and shared with each employee (Valve Handbook for New Employees 2012, p.26). The purpose of this process is to provide employees with information that will help them develop.

2.2.5.8 Compensation and incentives

In self-managed organizations, people adjust their own salaries with guidance from their peers. Although the salary adjustment process is formalized in large organizations, it is much simpler in small organizations (Laloux 2014, pp-129-130). All employees come together in a meeting to discuss their contributions and decide on the appropriate salary levels for each employee. As for incentives, self-managed organizations do not have either incentives or bonuses due to the fact that employees are motivated with

meaningful works and free work environment to express their talents and needs. Nonetheless, they share some part of the profit with all employees if the profit is high enough. Depending on the organizational culture, employees may receive the same fixed amount or the same fix percent of base salary.

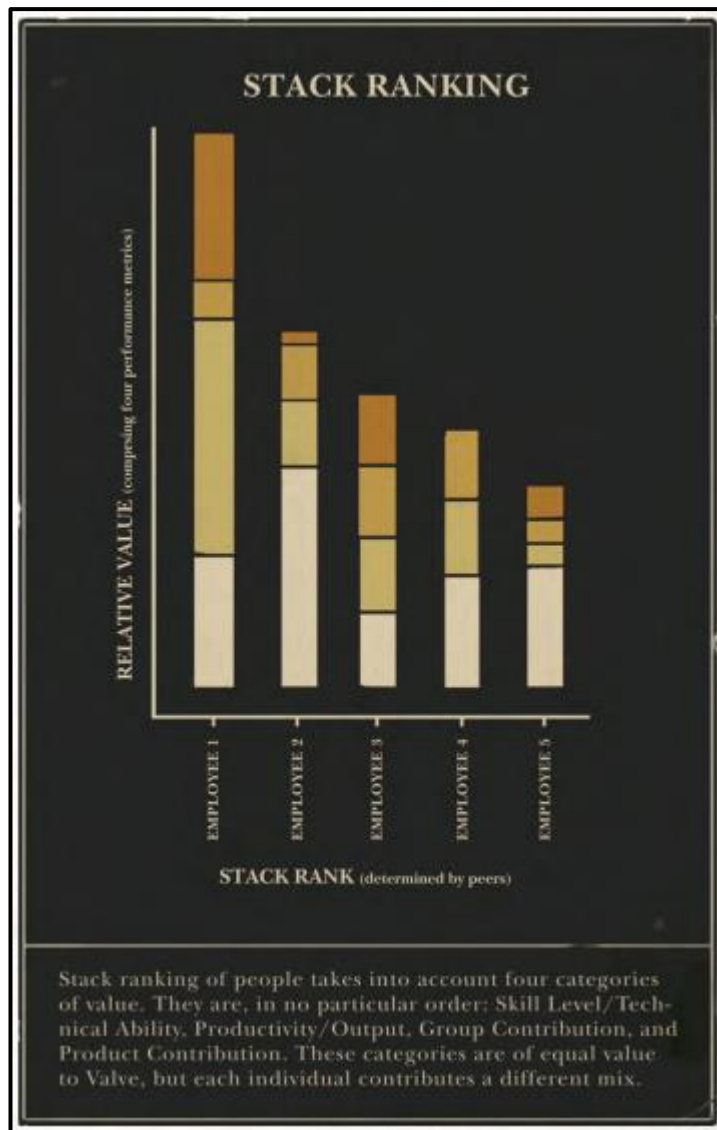
W.L. Gore & Associates involves every employee in compensation process. Once a year, each employee is asked to rank the colleagues they have worked with in order of their contribution to the company (Gore.com, [no date]). This process also require that all employees comment on the ranking, particular strengths or potential areas of improvement for the colleagues. The salaries are decided based on the results of this process.

Employees at Valve Corporation also rank each other to figure out the contribution of each employee and adjust their compensations accordingly (Valve Handbook for New Employees 2012, p.27). Employees are ranked by the members of project group they are involved in. They are evaluated based on their technical ability, productivity, group contribution and product contribution (Valve Handbook for New Employees 2012, pp.30-32). At Valve, employees have right to object to their compensation level if they think that it is not proper for the work they do. Figure 2.5 illustrates stack ranking at Valve.

Instead of having a ranking process, Morning Star has compensation committees composed of elected employees across the company to assist the compensation process. Employees set their salaries by themselves with feedback from elected compensation committee. At the end of every year, each employee writes a letter stating the requested salary increase and the reason for it (Laloux 2014, p.130). Moreover, they prepare a self-assessment document summarizing their performance against CLOU goals and any relevant data on KPIs they are responsible for (Hamel 2011). They share these documents, along with peer-based feedback received from CLOU colleagues, with the compensation committee. The committee is responsible for reviewing all documents, validating them, and setting individual compensation levels accordingly. It has only advisory role. It provides feedback to each employee about their compensation levels

and makes sure that they agree on the raises. If an employee insists on a higher compensation level, then the committee starts conflict resolution process (Laloux 2014, p.130).

Figure 2.5: Stack ranking at Valve



Source: Valve Handbook for New Employees 2012, p.31

Besides aforementioned organizations, Semco Partners allow its employees to set their own salaries without consulting peers or stack ranking (Laloux 2012, p.339). The company orders salary market surveys once or twice a year, share these surveys with its

employees, and ask them to define their salaries (Semler 1989). Employees are given the amount they ask for even if it is too much. However, if they are earning more than their contributions, they are asked to reevaluate their roles in the company. Due to the fact that all compensation information is shared publicly, employees do not raise their salaries to very high levels avoiding though questions of their colleagues (Laloux 2012, p.339).

2.2.5.9 Recruitment and dismissals

In self-managed organizations, employees are responsible for commencing the hiring process when they have excessive workloads or they notice new roles to be filled. Interviews are handled by future colleagues rather than a manager or human resources (HR) professional. A significant number of colleagues are involved in the interviews throughout the recruitment process. The focus in these interviews is on more of the attitude of candidates rather than their skills and experiences (Laloux 2014, p.174). Candidates should be suitable for the organization's culture and purpose instead of roles which are very fluid in self-managed organizations. Thus, most of the organizations spend a great deal of time during recruitment process introducing the candidates the concept of self-management, and values and practices of the organization.

Dismissals are very rare in self-managed organizations. Since roles are fluid and granular, people can customize roles for themselves according to their proficiencies (Laloux 2014, p.127). People with performance issues have the opportunity to exchange roles. Nevertheless, they might sometimes fail. In this case, they notice their poor performance and choose to leave prior to they are dismissed. In case they are forced to dismiss because of breaching the organization values, for instance, a dismissal process which relies on peer-based mechanisms starts. Most of the self-managed organizations consider a dismissal as the final step in a conflict and use their conflict resolution process to handle the issue (Laloux 2014, p.128). The process starts when one person requests another to resign. They try to resolve the issue with first a one-on-one

discussion between peers, then mediation by a trusted peer, and finally mediation by a group of topic-relevant peers.

2.2.6 Advantages

Self-management has a great deal of advantages. First of all, it increases flexibility. Team structure, along with decision-making authority, allows employees to come together and respond rapidly to situations. Fluid and granular roles facilitate handling challenges. Secondly, self-management promotes rapid and better decisions by enabling employees to make any decision about the works they are directly responsible for or issues relevant to their expertise. Thirdly, it encourages employees to develop their skills and expertise continuously in order to make them experts of their works. Fourthly, self-management model inherently encourages more initiative by giving them authority to make decisions and take action accordingly. Finally, it increases employee engagement and loyalty.

2.2.7 Disadvantages

Besides its advantages, self-management has some disadvantages. First of all, it is difficult to adjust for employees who are used to work in hierarchical organizations where people are managed and held accountable with command and control. Thus it takes some time for new employees to adapt self-management culture and practice main principles such as keeping commitments and no use of force. Moreover, in order to be effective, self-management has some requirements which are challenging to implement, such as balancing freedom with responsibility and taking initiative in all areas. Another difficulty is hiring process. It takes very long time to recruit new employees who are skilled enough and have ability to adapt self-management system. Finally, in the absence of corporate ladder to climb, it is difficult for employees in self-managed organizations to evaluate their progress relative to ones working in other organizations.

2.3 EMPLOYEE ENGAGEMENT

2.3.1 Definition

Employee engagement has become a subject undergoing intense study in recent years. Many consultancy companies and practitioners have written about this subject. However, there is a little academic and empirical research on employee engagement (Robinson, Perryman & Hayday 2004). Besides, there are several definitions for employee engagement in the academic literature. It has been mostly defined as passion for work (Truss et al. 2006), commitment to the organization (Richman 2006; Shaw 2005; Baumruk 2004) or discretionary effort put into work (Frank, Finnegan & Taylor 2004).

In the academic literature, Kahn (1990) first defined personal engagement as “the harnessing of organization members’ selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances.” In 1993, Schmidt et al. defined employee engagement as integration of job satisfaction and organizational commitment. Burnout researchers, on the other hand, characterize engagement by energy, involvement, and efficacy (Maslach, Schaufeli & Leiter 2001) or vigor, dedication, and absorption (Schaufeli et al. 2002), which are the opposites of the three burnout dimensions of exhaustion, cynicism, and inefficacy (Saks 2006).

Employee engagement is also related to other concepts in organizational behavior such as organizational commitment, organizational citizenship behavior (OCB) and job involvement (Saks 2006). However, it distinguishes from them. To be more specific, organizational commitment is related to a person’s attitude and attachment towards their organization, OCB depends mainly on voluntary and informal behaviors, and job involvement is associated with cognitive state of psychological identification (Saks 2006). Employee engagement, on the other hand, is more than attitudes or cognitions. It is a recognizably different and unique concept that contains cognitive, emotional and behavioral elements related to individual role performance.

2.3.2 Models and Theoretical Frameworks

As explained in previous section, it is difficult to define employee engagement in a unique way. In their recent research, Shuck and Wollard (2011) have identified four approaches in order to define employee engagement. These approaches are explained in the following sections.

2.3.2.1 The needs-satisfying approach

This approach depends on Kahn's (1990) research. According to this approach, engagement is how people express themselves while executing their work roles. This approach assumes that engagement is related with meaningfulness, safety and availability; and employees become engaged when these needs are satisfied. In other words, an employee would be more engaged when the work is meaningful, work environment is safe and personal resources are available to perform the job.

2.3.2.2 The burnout-antithesis approach

This approach expresses engagement as the positive antithesis of burnout. In this approach, engagement is characterized by vigor, dedication, and absorption (Schaufeli et al. 2002) or energy, involvement, and efficacy (Maslach, Schaufeli & Leiter 2001), which are the opposites of the burnout conceptual elements, namely, exhaustion, cynicism, and lack of accomplishment. Utrecht Work Engagement Scale (UWES), which is one of the most preferred questionnaires, is based on this approach.

2.3.2.3 The satisfaction-engagement approach

This approach has emerged from Gallup's Q¹² engagement survey. In this approach, engagement is defined in terms of job satisfaction, job involvement and enthusiasm for

work; and it focuses on perceived job resources in order to measure employee engagement. This approach is not preferred for academic purposes. Instead, it is mostly used by companies to find out how to satisfy employees with their jobs.

2.3.2.4 The multidimensional approach

Most of the research on employee engagement has focused on job engagement. However, in his study, Saks (2006) approaches the subject from a different perspective and develops the multidimensional approach in which job engagement and organizational engagement are distinguished from each other. Saks (2006) defines engagement based on role performance at work as Kahn (1990) does. However, he explains it with the perspective of social exchange theory (SET) and argues that employees will focus more on their role performance and engage more with their organization when they receive social and economic resources such as, recognition, rewards, development opportunities, from their organization. Thus, job engagement and organizational engagement can be assessed together. According to this approach, job engagement and organizational engagement are related to some extent but their antecedents and consequences are quite different.

2.3.3 Main Drivers

As explained in details in the previous section, there are several approaches defining employee engagement and each approach proposes antecedents different from each other. Research based on Job Demands-Resources (JD-R) model (Schaufeli and Bakker 2010; Xanthopoulou et al. 2007) have identified these antecedents as motivating nature of resources and summarized them under two main variables that drive engagement. These main drivers are job resources and personal resources.

2.3.3.1 Job resources

Job resources are organizational, social, psychological, or physical aspects of the job which are helpful in achievement of work goals and decreasing the negative effects of job demands. Moreover, they foster personal growth, learning, and development. Professional development opportunities, task variety, feedback from supervisors and colleagues, autonomy, social support from colleagues, supervisor coaching, and role-clarity can be considered as examples of job resources. According to JD-R, job resources have a positive impact on work engagement (Xanthopoulou et al. 2007).

2.3.3.2 Personal resources

Personal resources are the aspects of self which are related with resilience and mean ability to control and exert impact on environment in a successful way. Emotional stability, conscientiousness, extraversion, self-efficacy, optimism, and resilience can be considered as examples of personal resources. According to JD-R, personal resources, as well, have a positive impact on work engagement (Xanthopoulou et al. 2007).

2.3.4 Outcomes

Employee engagement has several outcomes including organizational and business outcomes as well as individual ones. Engaged employees experience better health and positive emotions. They create their own personal and job resources and help other to get engaged. In addition, they are more absorbed by, satisfied with, and enthusiastic about their work. Thus, they take positive action for the development of the organization's interests and reputation, which leads to positive organizational outcomes. Since they care more, they stay in the company longer, become more productive and give better service resulting in customer satisfaction, higher sales and profits, and increased stock price (Kruse 2012).

There are several case studies that illustrate the relationships between employee engagement levels and particular organizational and business outcomes such as service, retention, quality, sales, safety, profit and total shareholder returns (Kruse 2012). All these cases show that employee engagement has positive impact on these outcomes. Moreover, some academic studies as well, show that role performance, organizational commitment, personal initiative and innovative behavior at team level increase with high levels of engagement (Schaufeli 2013). Furthermore, Gallup's study conducted in 2012 reveals similar results (Sorenson 2013). This study confirms that employee engagement increases customer ratings, profitability and productivity whereas it declines turnover, absenteeism, quality defects and safety incidents (Sorenson 2013).

In summary, both practitioner and academic studies reveal that employee engagement brings about positive outcomes for the organization at both individual and team level. It is also positively related with business success.

3. DATA AND METHOD

3.1 AIM OF THE RESEARCH

The main scope of this research is to assess the effect of self-management on employee engagement. Self-management is a new model for organizations and management. It is considered as the major breakthrough of future organizations (Laloux 2014, p.56). Besides, the importance of employee engagement has been increased dramatically since last decade (Schaufeli 2013). Considering these two facts, it can be stated that this research will be helpful for researchers in analyzing employee engagement with a novel approach, understanding how self-management affects employee engagement and advancing the knowledge in this area.

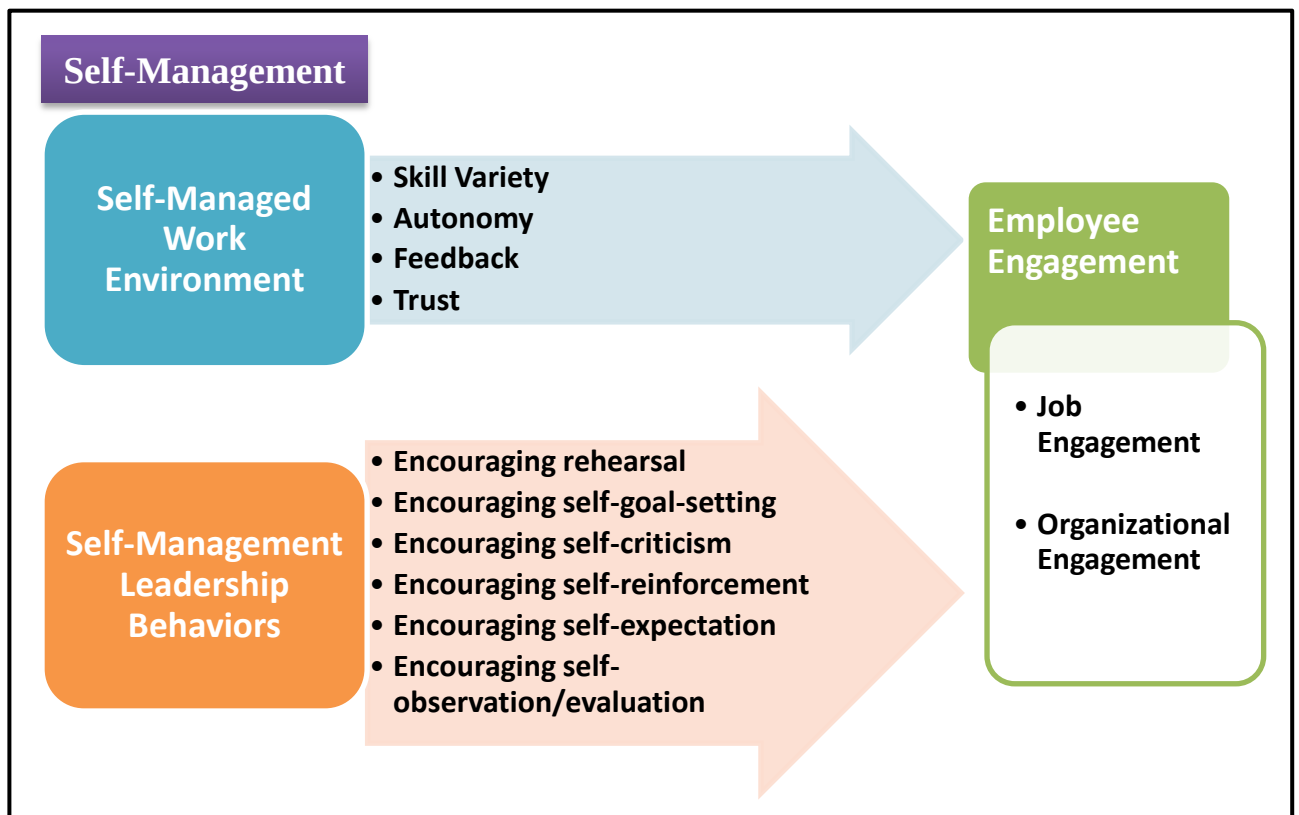
In previous sections, the concept of self-management is introduced and self-managed organizations are analyzed based on their cultures and work environment, organizational structures, leadership behaviors, processes and practices. Moreover, employee engagement construct is defined, models and theoretical frameworks regarding this concept are examined, and its main drivers and outcomes are explained.

In the following sections, research model, sample, hypotheses, constraints, limitations and assumptions of the research are presented; applied research method is explained; and data collection and analysis methods are stated.

3.2 RESEARCH MODEL AND HYPOTHESES

In this study, a research model (Figure 3.1) is developed based on the literature and research on the concepts of self-management and employee engagement in order to measure the relationships between them. In this model, self-management is conceptualized in terms of self-managed work environment and self-management leadership behaviors. Self-managed work environment has four dimensions, namely,

Figure 3.1: Research Model



skill variety, autonomy, feedback and trust while self-management leadership behaviors consist of six dimensions which are encouraging rehearsal, encouraging self-goal-setting, encouraging self-criticism, encouraging self-reinforcement, encouraging self-expectation and encouraging self-observation/evaluation. Moreover, employee engagement is conceptualized based on the multidimensional approach in which job engagement and organizational engagement are distinguished from each other.

Four hypotheses are formed based on the research model. The hypotheses are non-directional in order to test how self-management effect employee engagement. The hypotheses are listed in Table 3.1.

Table 3.1: Hypotheses of the research

HYPOTHESES	
Hypothesis 1	H ₀ : Self-managed work environment does not affect job engagement.
	H ₁ : Self-managed work environment affects job engagement.
Hypothesis 2	H ₀ : Self-managed work environment does not affect organizational engagement.
	H ₁ : Self-managed work environment affects organizational engagement.
Hypothesis 3	H ₀ : Self-management leadership behaviors do not affect job engagement.
	H ₁ : Self-management leadership behaviors affect job engagement.
Hypothesis 4	H ₀ : Self-management leadership behaviors do not affect organizational engagement.
	H ₁ : Self-management leadership behaviors affect organizational engagement.

3.3 RESEARCH METHOD AND SCOPE

In this study, online questionnaire is used as the research method. The questionnaire has been shared on the web using google forms. It consists of two parts. In the first part, 51 items are used to measure the research model. Items are measured based on five-level Likert scale. In other words, respondents have been asked to indicate their level of agreement on a scale of 1 to 5, with 1 representing strongly disagree, 5 representing strongly agree, and 3 representing a neutral point. In the second part, 12 multiple-choice questions have been asked to respondents in order to gather demographic information. The questionnaire is attached as Appendix 1.

The universe of the research is white-collar workers. The sampling unit is any white-collar worker working in any sector in Turkey. For this study, sample is selected through simple random sampling among white-collar workers in Turkey holding diverse positions in different companies. The questionnaire has been delivered to 600 respondents. 180 out of the 600 questionnaires delivered have been responded back. Therefore the sample size for this research is 180.

3.4 MEASUREMENTS AND DATA ANALYSIS

The scales of the questionnaire are determined according to the research model and chosen based on the theoretical research.

In order to measure employee engagement, Saks's (2006) scales for job engagement and organizational engagement are used. A five-item scale is used to measure job engagement and a six-item scale is used to measure organizational engagement. Thus 11 items are used in total to measure employee engagement.

Self-management is assessed using dimensions of self-managed work environment and self-management leadership behaviors. Skill variety (five-item scale), autonomy (four-item scale), and feedback (six-item scale) are measured by scales from Hackman and Oldham (1980). Trust is measured with a three-item scale (Cammann, Jenkins, and Nadler 1975). Encouraging rehearsal (four-item scale), encouraging self-goal-setting (four-item scale), encouraging self-criticism (four-item scale), encouraging self-reinforcement (four-item scale), encouraging self-expectation (three-item scale), and encouraging self-observation/evaluation (three-item scale) are measured by using scales from Manz and Sims' (1987) Self-Management Leadership Questionnaire (SMLQ). Therefore, 40 items are used in total to measure self-management concept. The distribution of all the questions is listed in Table 3.2.

In the questionnaire, five-level Likert scale is used for data acquisition. Respondents have been stated how much they agree or disagree with the statements. In the scale, 1 represents a response of strongly disagree, 2 disagree, 3 neutral, 4 agree and 5 strongly agree. It is suggested to evaluate the amount of variance for each variable according to the neutral point in order to analyze the results. While scores below 3 indicates unfavorable approaches to the concept, scores above 3 indicates favorable approaches. The severity of the issue depends on how close the score to 1. The results have been analyzed with IBM SPSS Statistics v21.

Table 3.2: Distribution of the questions

VARIABLES	QUESTIONS					
Job Engagement	Q5	Q15	Q27	Q3 (R)	Q47	
Organizational Engagement	Q1	Q7	Q19 (R)	Q31	Q43	Q51
Skill Variety	Q3	Q9	Q21 (R)	Q33	Q45 (R)	
Autonomy	Q11	Q23 (R)	Q35 (R)	Q49		
Feedback	Q2	Q13	Q16 (R)	Q25	Q30	Q37 (R)
Trust	Q17 (R)	Q29 (R)	Q41			
Encouraging Rehearsal	Q4	Q18	Q32	Q44		
Encouraging Self-Goal-Setting	Q6	Q20	Q34	Q46		
Encouraging Self-Criticism	Q8	Q22	Q36	Q48		
Encouraging Self-Reinforcement	Q10	Q24	Q38	Q50		
Encouraging Self-Expectation	Q12	Q26	Q40			
Encouraging Self-Observation/Evaluation	Q14	Q28	Q42			

3.5 CONSTRAINTS, LIMITATIONS AND ASSUMPTIONS

There are some constraints in this research. First of all, the concept of self-management is not common and it is not known enough. Thus, there are limited studies focused on this concept. Secondly, there is a little academic and empirical research on employee engagement although it has become a subject undergoing intense study in recent years. Most of the studies on this subject are at practitioner level. Thirdly, the effect of self-management on employee engagement has rarely been analyzed due to the fact that these two concepts are recently developed. These facts have made it difficult to find a suitable research method and to determine the dimensions of the research elements. An empirical study conducted with experimental and control groups could be a more suitable method for this research. However, because of the limited time, a questionnaire has been applied instead. In order to construct the questionnaire, self-management concept is examined in detail with sample company cases throughout the study. Moreover, cultures and work environment, structures, leadership behaviors, processes,

and self-management practices of these companies are investigated and the dimensions are developed in a way that they characterize self-management and support the research model. Another constraint can be partial application of self-management. For instance, a manager may encourage self-management leadership behaviors within the team although the organization does not support self-managed work environment. The reverse might be true as well. Similarly, a respondent might be engaged with the job while he is not engaged with the organization because of the reasons that are not measured in the research model. This could cause partial acceptance of the hypotheses. Moreover, personal resources, which are not measured, might have different effects on job and organizational engagement. The final constraint can be regarded as the biased answers of the respondents who are accustomed to hierarchy and afraid of taking additional supervisory roles or the ones that do not favor their organizations because of personal reasons. This might have caused lack of reliability in the research.

In this research, not all the aspects of self-management have been examined. The concept of self-management has been assessed based on the research model. Thus, only self-managed work environment and self-management leadership behaviors are in the scope of this research. Moreover, a questionnaire consisting of 51 questions has been constructed based on the research dimensions and conducted among the white-collar workers that could be reached. Therefore, the research is also limited to scales used, acquired data and sample size.

The main assumption of this research is that respondents have been open and honest while answering the questions. It is also assumed that organizations having culture and work environment similar to self-managed work environment and encouraging self-management behaviors can be considered as self-managed organizations.

4. FINDINGS

4.1 DEMOGRAPHICS OF THE SAMPLE

As seen in Table 4.1, 37,2 percent of the respondents are female and 62,8 percent are male. Due to the fact that all the questions are selected as required question in google forms, there is no missing answer for this question as well as others.

Table 4.1: Distribution of gender

Gender				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Female	67	37,2	37,2	37,2
Valid Male	113	62,8	62,8	100,0
Total	180	100,0	100,0	

Table 4.2 illustrates the distribution of age of the respondents. Respondents were asked to indicate their age range. 3,3 percent of the respondents are under 25 years old, 56,1 percent are between 25 and 35, 27,2 percent are between 35 and 44, 12,2 percent are between 45 and 54, and only 1,1 percent of the respondents are between 55 and 64 years old.

Table 4.2: Distribution of age

Age				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid <25	6	3,3	3,3	3,3
Valid 25-34	101	56,1	56,1	59,4
Valid 35-44	49	27,2	27,2	86,7
Valid 45-54	22	12,2	12,2	98,9
Valid 55-64	2	1,1	1,1	100,0
Total	180	100,0	100,0	

Table 4.3 illustrates the distribution of marital status of the respondents. As seen in the table, 48,3 percent of the respondents are single and 51,7 percent are married.

Table 4.3: Distribution of marital status

Marital Status				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Single	87	48,3	48,3	48,3
Married	93	51,7	51,7	100,0
Total	180	100,0	100,0	

Table 4.4 illustrates the distribution of education level of the respondents. 5,6 percent of the respondents are graduates of vocational or technical school. Most of them hold a bachelor's degree (45 percent) or master's degree (47,2 percent). Their number is almost equal. Only 2,2 percent of the respondents have doctorate degree.

Table 4.4: Distribution of education level

Education Level				
	Frequency	Percent	Valid Percent	Cumulative Percent
Vocational/Technical School (2-year)	10	5,6	5,6	5,6
Bachelor's Degree	81	45,0	45,0	50,6
Valid Master's Degree	85	47,2	47,2	97,8
Doctorate Degree	4	2,2	2,2	100,0
Total	180	100,0	100,0	

Table 4.5 illustrates the distribution of total work experience of the respondents. Respondents were asked to indicate the range of their total work experiences in years. A quarter of them have been working for less than 5 years and just over a third (35 percent) have work experience between 5 and 10 years. About a fifth (21,1 percent) of the respondents have work experience between 10 and 20 years and 14,4 percent have work experience between 20 and 30 years. Only 4,4 percent of the respondents have been working more than 30 years.

Table 4.5: Distribution of total work experience

Total Work Experience (years)				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<5	45	25,0	25,0
	5-10	63	35,0	60,0
	10-20	38	21,1	81,1
	20-30	26	14,4	95,6
	>30	8	4,4	100,0
	Total	180	100,0	100,0

Table 4.6 illustrates the distribution of sector that the organizations of the respondents are in. As seen in the table, almost all of the respondents (94,4) are working in private sector.

Table 4.6: Distribution of sector

Sector of Organization				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Private	170	94,4	94,4
	Public	10	5,6	100,0
	Total	180	100,0	100,0

Table 4.7 illustrates the distribution of size of the organizations where the respondents are working. As seen in the table, almost three-quarters (73,3 percent) of the respondents are working in organizations with full-time employees less than 1500. About half (14,4 percent) of the remaining respondents are working in organizations with full-time employees between 1500 and 5000. The remaining organizations (12,2 percent) have more than 5000 employees.

Table 4.7: Distribution of organization size

Size of Organization (Total Number of Full-Time Employees)				
	Frequency	Percent	Valid Percent	Cumulative Percent
<100	31	17,2	17,2	17,2
100-499	53	29,4	29,4	46,7
500-999	42	23,3	23,3	70,0
1000-1499	6	3,3	3,3	73,3
1500-2499	18	10,0	10,0	83,3
2500-5000	8	4,4	4,4	87,8
>5000	22	12,2	12,2	100,0
Total	180	100,0	100,0	

Table 4.8: Distribution of industry

Industry of Organization				
	Frequency	Percent	Valid Percent	Cumulative Percent
Banking	6	3,3	3,3	3,3
Construction	6	3,3	3,3	6,7
Consulting	17	9,4	9,4	16,1
Education	6	3,3	3,3	19,4
Energy	15	8,3	8,3	27,8
Finance & Insurance	2	1,1	1,1	28,9
Healthcare & Medical	4	2,2	2,2	31,1
Information & Communication	16	8,9	8,9	40,0
Manufacturing	82	45,6	45,6	85,6
Other	12	6,7	6,7	92,2
Transportation & Distribution	2	1,1	1,1	93,3
Wholesale & Retail	12	6,7	6,7	100,0
Total	180	100,0	100,0	

Table 4.8 illustrates the distribution of industry that the organizations of the respondents are in. As seen in the table, almost half (45,6 percent) of the respondents are working in manufacturing industry. The remaining respondents are distributed to numerous

industries. The other remarkable industries are consulting (9,4 percent), information and communication (8,9 percent), energy (8,3 percent) and wholesale and retail (6,7 percent).

Table 4.9 illustrates the distribution of total work experience of the respondents in their current company. As seen in the table, almost three-quarters (72,2 percent) of the respondents have been working in their current company for less than 5 years. Just over a quarter (27,8 percent) of them have a tenure of more than 5 years in their current company.

Table 4.9: Distribution of tenure at current company

Tenure at Current Company (years)				
	Frequency	Percent	Valid Percent	Cumulative Percent
<1	28	15,6	15,6	15,6
1-3	77	42,8	42,8	58,3
3-5	25	13,9	13,9	72,2
Valid 5-10	26	14,4	14,4	86,7
10-20	16	8,9	8,9	95,6
>20	8	4,4	4,4	100,0
Total	180	100,0	100,0	

Table 4.10 illustrates the distribution of department or work group of the respondents. As seen in the table, more than a quarter (27,2 percent) of the respondents are working in engineering department. The remaining respondents are working in numerous departments. The other remarkable departments are information technologies (11,1 percent), production (8,9 percent), research and development (8,9 percent), sales (6,7 percent), human resources (6,7 percent), project management (6,1 percent), and administration (5,6 percent).

Table 4.11 illustrates the distribution of current position or job level of the respondents. About two-thirds of the respondents (65,6 percent) are salaried employees at different job levels. Almost a third (31,1 percent) of them are at management positions.

Table 4.10: Distribution of department

Working Department / Work Group				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Administration	10	5,6	5,6
	Customer Service	4	2,2	7,8
	Engineering	49	27,2	35,0
	Finance / Accounting	4	2,2	37,2
	Human Resources	12	6,7	43,9
	Information Technologies	20	11,1	55,0
	Marketing	6	3,3	58,3
	Other	10	5,6	63,9
	Production	16	8,9	72,8
	Project Management	11	6,1	78,9
	Purchasing/Sourcing/Procurement	2	1,1	80,0
	Quality	4	2,2	82,2
	Research & Development	16	8,9	91,1
	Sales	12	6,7	97,8
	Strategic Planning & Business Development	4	2,2	100,0
	Total	180	100,0	100,0

Table 4.11: Distribution of current position

Current Position / Job Level				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Salaried Employee (Entry Level)	11	6,1	6,1
	Salaried Employee (Mid-Level)	47	26,1	32,2
	Salaried Employee (Senior)	60	33,3	65,6
	Independent Consultant	4	2,2	67,8
	Middle Management	44	24,4	92,2
	Upper Management	12	6,7	98,9
	Owner / Business Partner	2	1,1	100,0
	Total	180	100,0	100,0

Table 4.12 illustrates the distribution of total work experience of the respondents in their current position or job level. The respondents were asked to indicate how long they have been working in their current position. As seen in the table, a fifth of (20 percent) of the respondents have been working in their current position for less than 1 year. Just under a half (43,3 percent) of them have a tenure of 1 to 3 years in their current position. 18,9 percent have spent 3 to 5 years and 17,8 percent have spent more than 5 years in the current position.

Table 4.12: Distribution of tenure in current position

Tenure in Current Position / Job Level (years)				
	Frequency	Percent	Valid Percent	Cumulative Percent
<0,5	10	5,6	5,6	5,6
0,5-1	26	14,4	14,4	20,0
1-3	78	43,3	43,3	63,3
Valid 3-5	34	18,9	18,9	82,2
5-10	18	10,0	10,0	92,2
>10	14	7,8	7,8	100,0
Total	180	100,0	100,0	

4.2 FACTOR AND RELIABILITY ANALYSES

Factor analysis is used to determine the dimensions that define the concepts used in the research model. Although the dimensions are already stated theoretically, factor analysis helps to describe these concepts with acquired data. Another reason to use factor analysis is to reduce the number of variables. In order to make factor analysis, there should be adequate correlation between the variables. Correlation is controlled with Kaiser-Meyer-Olkin (KMO) and Bartlett's sphericity tests before factor analysis. If p value of Bartlett's test is less than 0,05 significance level, the correlation between the variables is sufficient for factor analysis (Durmuş, Yurtkoru and Çinko 2013, p.79). KMO value should also be examined. KMO takes values between 0 and 1 and acceptable lower limit for it is 0,50 (Durmuş, Yurtkoru and Çinko 2013, p.80). KMO values and their interpretations are shown in Table 4.13. Besides KMO, Measures of

Sampling Adequacy (MSA) value for all the questions should also be controlled. In SPSS, Anti-image Correlation Matrices is used for this purpose. MSA values are analyzed in the same way as KMO.

Table 4.13: KMO values and their interpretations

KMO Value	Interpretation
0,900 to 1,000	Excellent
0,800 to 0,899	Very Good
0,700 to 0,799	Appropriate
0,600 to 0,699	Medium
0,500 to 0,599	Weak
0,000 to 0,499	Unacceptable

Source: Durmuş, Yurtkoru and Çinko 2013, p.80

Reliability analysis is used to assess the consistency of a measurement scale. If a measurement scale produces similar results under consistent conditions, it is considered to be highly reliable. The reliability of the dimensions should be controlled after factor analysis. The reliability of this research has been examined by using “Alpha” coefficient in “Cronbach’s Alpha” test. A scale is considered reliable when the Cronbach’s Alpha value is equal and greater than 0,70. However, this limit might be considered as 0,60 if there are quite a few number of questions (Durmuş, Yurtkoru and Çinko 2013, p.89). In the following sections, factor and reliability analyses are conducted for self-managed work environment, self-management leadership behaviors and employee engagement respectively and new factors are set based on the analyses.

4.2.1 Factor and Reliability Analyses for Self-Managed Work Environment

4.2.1.1 Factor analysis for self-managed work environment

In the research model, self-managed work environment has four dimensions which are skill variety, autonomy, feedback and trust. The questions measuring these dimensions

have been listed in Table 3.2 in the previous section. Factor analysis is done in SPSS to define the new dimensions and associated questions. As shown in Table 4.14, p value is 0,000 and KMO value is 0,758. Thus, the correlation between variables is sufficient to do factor analysis and relevance of the variables to factor analysis is appropriate.

Table 4.14: KMO and Bartlett's Test for "Self-Managed Work Environment"

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,758
Approx. Chi-Square		1405,173
Bartlett's Test of Sphericity		df
		153
		Sig.
		,000

Table 4.15: Rotated Component Matrix for "Self-Managed Work Environment"

Rotated Component Matrix ^a						
	Component					
	1	2	3	4	5	6
AU4_Q49	,765	,244	,022	,198	,120	,066
AU2_Q23_R	,718	-,034	,107	,079	,284	,096
AU1_Q11	,649	,304	-,034	,393	-,045	,133
TR2_Q29_R	,645	,334	,463	-,083	-,032	-,102
TR3_Q41	,600	,452	,359	-,085	-,092	,300
AU3_Q35_R	,564	-,251	,259	,395	,233	-,040
SV1_Q3	,100	,808	,280	,091	,136	,082
SV2_Q9	,185	,800	,077	,104	,246	-,121
SV4_Q33	,131	,571	,014	,301	,335	,043
FB1_Q2	,047	,071	,836	,233	,043	,055
FB5_Q30	,192	,182	,790	,048	,005	,111
FB3_Q25	,043	,112	,041	,767	-,068	-,096
FB6_Q37_R	,152	,153	,097	,661	,130	,318
FB2_Q13	,322	,094	,372	,569	,209	-,011
SV5_Q45_R	,118	,139	-,002	,117	,860	,090
SV3_Q21_R	,119	,356	,047	-,047	,788	-,045
FB4_Q16_R	,063	-,042	,056	,120	,054	,898
TR1_Q17_R	,452	,100	,383	-,301	-,034	,511

Table 4.15 illustrates the six components that are extracted, distribution of the questions and their factor loadings after factor analysis. As seen in the table, question 17 has factor loadings close to each other under the first (0,452) and sixth (0,511) factors. Thus, this question is excluded from the analysis and factor analysis is repeated. The new rotated component matrix is illustrated in Table 4.16. As seen in the table, question 16 is the only variable of the sixth factor, therefore, it is excluded as well and factor analysis is repeated again.

Table 4.16: Rotated Component Matrix for “Self-Managed Work Environment” (Q17 excluded)

Rotated Component Matrix^a						
	Component					
	1	2	3	4	5	6
AU4_Q49	,766	,244	,020	,212	,118	,020
AU2_Q23_R	,748	-,032	,132	,011	,274	,160
AU1_Q11	,648	,306	-,037	,399	-,042	,114
TR2_Q29_R	,646	,333	,461	-,071	-,032	-,157
TR3_Q41	,601	,471	,354	-,054	-,103	,187
AU3_Q35_R	,561	-,257	,256	,386	,237	-,007
SV1_Q3	,107	,810	,283	,083	,141	,064
SV2_Q9	,174	,790	,065	,132	,259	-,166
SV4_Q33	,156	,565	,036	,226	,342	,149
FB1_Q2	,058	,074	,844	,213	,040	,065
FB5_Q30	,203	,191	,797	,037	-,002	,085
FB3_Q25	,021	,097	,023	,803	-,051	-,094
FB6_Q37_R	,151	,159	,096	,666	,130	,320
FB2_Q13	,309	,085	,359	,605	,216	-,044
SV5_Q45_R	,127	,135	,006	,099	,858	,117
SV3_Q21_R	,098	,348	,027	,010	,794	-,119
FB4_Q16_R	,115	,000	,099	,040	,017	,922

The new KMO value is 0,782 (Table 4.17). Five components are extracted (Table 4.19) after the exclusion of question 16 and 17, and these components explain 69,205 percent (Table 4.18) of the total variance. Before entitling these factors and calculating their factor values, reliability analyses should be completed.

Table 4.17: KMO and Bartlett's Test for "Self-Managed Work Environment" (Q 16 & Q17 excluded)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,782
Approx. Chi-Square		1205,882
Bartlett's Test of Sphericity	df	120
	Sig.	,000

Table 4.18: Total Variance Explained for "Self-Managed Work Environment" (Q 16 & Q17 excluded)

Total Variance Explained						
Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5,521	34,504	34,504	2,908	18,176	18,176
2	1,761	11,004	45,508	2,346	14,664	32,840
3	1,519	9,493	55,001	2,019	12,617	45,457
4	1,241	7,757	62,757	1,998	12,488	57,946
5	1,032	6,447	69,205	1,801	11,259	69,205
6	,778	4,864	74,069			
7	,647	4,042	78,111			
8	,601	3,754	81,865			
9	,573	3,582	85,448			
10	,490	3,065	88,513			
11	,435	2,720	91,233			
12	,415	2,594	93,826			
13	,348	2,175	96,001			
14	,261	1,633	97,634			
15	,210	1,315	98,949			
16	,168	1,051	100,000			

Table 4.19: Rotated Component Matrix for “Self-Managed Work Environment” (Q 16 & Q17 excluded)

Rotated Component Matrix^a					
	Component				
	1	2	3	4	5
AU4_Q49	,758	,247	,225	,013	,118
AU2_Q23_R	,756	-,042	,035	,138	,280
AU1_Q11	,654	,287	,420	-,031	-,037
TR2_Q29_R	,634	,339	-,071	,454	-,030
TR3_Q41	,620	,459	-,025	,361	-,097
AU3_Q35_R	,546	-,264	,389	,255	,240
SV1_Q3	,115	,805	,100	,284	,142
SV2_Q9	,157	,803	,130	,053	,255
SV4_Q33	,173	,540	,250	,049	,348
FB3_Q25	-,008	,108	,792	,006	-,061
FB6_Q37_R	,172	,123	,698	,113	,135
FB2_Q13	,287	,087	,605	,350	,212
FB1_Q2	,057	,071	,221	,845	,039
FB5_Q30	,209	,186	,051	,801	,001
SV5_Q45_R	,130	,126	,116	,011	,860
SV3_Q21_R	,080	,362	,008	,017	,790

4.2.1.2 Reliability analysis for the first factor of self-managed work environment

The reliability analysis for the first factor of self-managed work environment is shown in Table 4.20. As seen in the table, the Cronbach’s Alpha value is 0,831 and deletion of any question in the list results in a decline in this value. Thus, this factor is reliable and all the questions should be assessed together.

4.2.1.3 Reliability analysis for the second factor of self-managed work environment

The reliability analysis for the second factor of self-managed work environment is illustrated in Table 4.21. The value of Cronbach’s Alpha is 0,777 as seen in the table. Therefore, this factor is reliable. However, if question 33 is deleted, the Cronbach’s

Alpha value becomes 0,798 by increasing slightly. Thus, this question should be excluded from the scope of the research in order to increase reliability. Factor analysis is repeated without this question and the results are illustrated in Table 4.22, Table 4.23, and Table 4.24.

Table 4.20: Reliability Analysis for the first factor of “Self-Managed Work Environment”

Reliability Statistics				
Cronbach's Alpha	N of Items			
,831	6			
Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
AU1_Q11	17,19	17,774	,587	,806
AU2_Q23_R	17,03	18,010	,600	,804
AU3_Q35_R	17,04	19,473	,459	,830
AU4_Q49	17,37	17,049	,690	,786
TR2_Q29_R	17,68	16,030	,650	,794
TR3_Q41	17,86	16,806	,633	,797

Table 4.21: Reliability Analysis for the second factor of “Self-Managed Work Environment”

Reliability Statistics				
Cronbach's Alpha	N of Items			
,777	3			
Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
SV1_Q3	7,84	2,233	,698	,617
SV2_Q9	7,83	2,933	,672	,638
SV4_Q33	7,59	3,707	,520	,798

Table 4.22: KMO and Bartlett's Test for "Self-Managed Work Environment" (Q 16, Q17 & Q33 excluded)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,780
Approx. Chi-Square		1111,166
Bartlett's Test of Sphericity	df	105
	Sig.	,000

Table 4.23: Total Variance Explained for "Self-Managed Work Environment" (Q 16, Q17 & Q33 excluded)

Total Variance Explained						
Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5,225	34,832	34,832	2,937	19,582	19,582
2	1,660	11,068	45,899	2,004	13,363	32,945
3	1,519	10,126	56,025	1,991	13,274	46,219
4	1,235	8,231	64,256	1,977	13,178	59,397
5	1,026	6,843	71,099	1,755	11,702	71,099
6	,716	4,773	75,871			
7	,645	4,298	80,169			
8	,577	3,845	84,014			
9	,492	3,277	87,291			
10	,458	3,053	90,343			
11	,418	2,787	93,130			
12	,353	2,354	95,484			
13	,270	1,797	97,281			
14	,227	1,512	98,792			
15	,181	1,208	100,000			

As seen in Table 4.22, KMO value has increased to 0,780. As seen in Table 4.24, the number of components extracted and questions related with factors do not change after the exclusion of question 33. However, the percentage of the components to explain the total variance has increased to 71,099 (Table 4.23). The factors are continued to be sorted according to Table 4.19.

Table 4.24: Rotated Component Matrix for “Self-Managed Work Environment” (Q 16, Q17 & Q33 excluded)

Rotated Component Matrix^a					
	Component				
	1	2	3	4	5
AU4_Q49	,760	,008	,239	,233	,132
AU2_Q23_R	,756	,146	,025	-,081	,269
AU1_Q11	,668	-,021	,420	,240	-,029
TR2_Q29_R	,634	,444	-,054	,356	-,009
TR3_Q41	,631	,362	-,015	,445	-,082
AU3_Q35_R	,547	,271	,363	-,325	,211
FB1_Q2	,055	,843	,222	,071	,038
FB5_Q30	,214	,806	,048	,170	-,003
FB3_Q25	-,007	-,002	,806	,102	-,054
FB6_Q37_R	,184	,125	,695	,071	,140
FB2_Q13	,288	,347	,613	,065	,215
SV2_Q9	,176	,043	,171	,799	,304
SV1_Q3	,139	,286	,128	,781	,180
SV5_Q45_R	,140	,022	,119	,065	,864
SV3_Q21_R	,086	,008	,037	,349	,820

4.2.1.4 Reliability analysis for the third factor of self-managed work environment

The reliability analysis for the third factor is shown in Table 4.25. As seen in the table, the Cronbach’s Alpha value is 0,650 which is quite low compared to the values in previous analyses. However, it is greater than 0,60 and acceptable for reliability (Durmuş, Yurtkoru and Çinko 2013, p.89) owing to the fact that the amount of questions for this factor is low. Deletion of any question in the list decreases this value. Therefore, this factor is considered as reliable and all the questions should be assessed together.

Table 4.25: Reliability Analysis for the third factor of “Self-Managed Work Environment”

Reliability Statistics				
Cronbach's Alpha	N of Items			
,650	3			
Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
FB2_Q13	6,69	2,964	,488	,519
FB3_Q25	6,89	3,138	,447	,573
FB6_Q37_R	7,11	2,602	,456	,569

4.2.1.5 Reliability analysis for the fourth factor of self-managed work environment

As seen in Table 4.26, the Cronbach's Alpha value is 0,712 for the fourth factor. Thus, this factor is reliable and all the questions should be assessed together.

Table 4.26: Reliability Analysis for the fourth factor of “Self-Managed Work Environment”

Reliability Statistics				
Cronbach's Alpha	N of Items			
,712	2			
Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
FB1_Q2	2,79	1,050	,558	.
FB5_Q30	2,81	1,394	,558	.

4.2.1.6 Reliability analysis for the fifth factor of self-managed work environment

As seen in Table 4.27, the Cronbach's Alpha value is 0,753 for the fifth factor. Thus, this factor is reliable and all the questions should be assessed together.

Table 4.27: Reliability Analysis for the fifth factor of “Self-Managed Work Environment”

Reliability Statistics				
Cronbach's Alpha	N of Items			
,753	2			
Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
SV3_Q21_R	3,89	1,004	,604	.
SV5_Q45_R	4,01	1,073	,604	.

4.2.1.7 Factors of self-managed work environment

As explained in previous sections, the first factor includes questions related with autonomy and trust. Thus, it will be entitled as “Autonomy and Trust”. The second factor contains questions of “Skill Variety” dimension in the research model and it will not be redefined. The third factor includes questions about feedback from the job and the forth one contains questions about feedback from supervisors. Thus, they will be entitled as “Feedback from Job” and “Feedback from Supervisors” respectively. Although the last factor also includes questions of “Skill Variety” dimension, these questions are mainly about regularity of the job. Thus, it will be entitled as “Job Dynamism”. Thus, the new factors of self-managed work environment are “Autonomy and Trust”, “Skill Variety”, “Feedback from Job”, “Feedback from Supervisors”, and “Job Dynamism”.

4.2.2 Factor and Reliability Analyses for Self-Management Leadership Behaviors

4.2.2.1 Factor analysis for self-management leadership behaviors

In the research model, self-management leadership behaviors have six dimensions which are encouraging rehearsal, encouraging self-goal-setting, encouraging self-

criticism, encouraging self-reinforcement, encouraging self-expectation and encouraging self-observation/evaluation. The questions measuring these dimensions have been listed in Table 3.2 in the previous section. Factor analysis is done in SPSS to define the new dimensions and associated questions. As shown in Table 4.28, p value is 0,000 and KMO value is 0,900. Thus, the correlation between variables is sufficient to do factor analysis and relevance of the variables to factor analysis is excellent.

Table 4.28: KMO and Bartlett's Test for "Self-Management Leadership Behaviors"

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,900
Approx. Chi-Square		3538,908
Bartlett's Test of Sphericity	df	231
	Sig.	,000

Table 4.29 illustrates the three components that are extracted after factor analysis, distribution of the questions and their factor loadings. As seen in the table, there are some factor loadings close to each other under different factors. However, these questions are not excluded from the analysis for now. Factors will be analyzed again after conducting reliability analyses.

4.2.2.2 Reliability analysis for the first factor of self-management leadership behaviors

The reliability analysis for the first factor of self-management leadership behaviors is illustrated in Table 4.30. The value of Cronbach's Alpha is 0,822 as seen in the table. Therefore, this factor is reliable. However, if question 22 is deleted, the Cronbach's Alpha value becomes 0,866 by increasing significantly. Thus, this question should be excluded from the scope of the research in order to increase reliability. Factor analysis is repeated without this question.

Table 4.29: Rotated Component Matrix for “Self-Management Leadership Behaviors”

Rotated Component Matrix^a			
	Component		
	1	2	3
ESR3_Q38	,899	,100	,130
ESR4_Q50	,875	,225	,131
ESG3_Q34	,797	,155	,225
ESG2_Q20	,784	,214	,125
ESE1_Q12	,775	,320	-,006
ESR1_Q10	,721	,361	-,016
ESO1_Q14	,650	,439	,266
ESG4_Q46	,640	,418	,278
ESO3_Q42	,637	,259	,360
ESR2_Q24	,630	,326	,145
ESG1_Q6	,574	,539	,028
ERH1_Q4	,107	,851	,035
ERH3_Q32	,301	,799	,186
ERH2_Q18	,324	,789	,079
ERH4_Q44	,421	,738	,233
ESO2_Q28	,460	,587	,399
ESC1_Q8	,272	,535	,503
ESC2_Q22	-,161	-,119	,785
ESC3_Q36	,177	,539	,663
ESC4_Q48	,262	,491	,640
ESE3_Q40	,509	,114	,624
ESE2_Q26	,512	,279	,614

The new rotated component matrix is illustrated in Table 4.32. As seen in the table, question 28 has factor loadings close to each other under all factors. Thus, this question is excluded from the analysis and factor analysis is repeated without this question and the results are illustrated in Table 4.33 and Table 4.34. As seen in Table 4.33, KMO value has increased to 0,905. As seen in Table 4.34, the number of components extracted does not change after the exclusion of question 28. However, questions related with factors have changed. For instance, question 8 is now included in the first factor. Thus, reliability analysis for this factor should be repeated. Another issue is that question 6 has factor loadings close to each other under different factors. However, this

question will not be excluded due to the fact that it is related with other questions in its own factor. The new reliability analysis for the first factor is illustrated in Table 4.31. The value of Cronbach's Alpha has become 0,883 and deletion of any question in the list decreases this value. Thus, this factor is reliable and all the questions should be assessed together.

Table 4.30: Reliability Analysis for the first factor of “Self-Management Leadership Behaviors”

Reliability Statistics				
Cronbach's Alpha	N of Items			
,822	5			
Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ESC2_Q22	12,81	11,327	,355	,866
ESC3_Q36	12,46	9,903	,717	,758
ESC4_Q48	12,46	10,104	,701	,764
ESE2_Q26	12,17	9,637	,716	,757
ESE3_Q40	12,33	10,011	,644	,779

Table 4.31: Reliability Analysis for the first factor of “Self-Management Leadership Behaviors” (Q22 & Q28 excluded)

Reliability Statistics				
Cronbach's Alpha	N of Items			
,883	5			
Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ESC1_Q8	12,81	11,327	,687	,866
ESC3_Q36	12,88	11,706	,751	,850
ESC4_Q48	12,88	11,907	,738	,853
ESE2_Q26	12,59	11,417	,748	,850
ESE3_Q40	12,76	11,828	,676	,867

**Table 4.32: Rotated Component Matrix for “Self-Management Leadership Behaviors”
(Q22 excluded)**

Rotated Component Matrix^a			
	Component		
	1	2	3
ESR3_Q38	,888	,213	,081
ESR4_Q50	,859	,241	,198
ESG2_Q20	,778	,195	,209
ESE1_Q12	,770	,119	,314
ESG3_Q34	,760	,354	,094
ESR1_Q10	,702	,159	,328
ESG4_Q46	,617	,370	,383
ESO1_Q14	,612	,415	,374
ESR2_Q24	,609	,264	,287
ESO3_Q42	,605	,432	,206
ESG1_Q6	,586	,099	,568
ESC3_Q36	,100	,781	,406
ESC4_Q48	,186	,764	,359
ESE2_Q26	,441	,723	,153
ESE3_Q40	,435	,718	-,019
ESC1_Q8	,206	,649	,416
ESO2_Q28	,410	,549	,500
ERH1_Q4	,102	,165	,846
ERH2_Q18	,307	,243	,760
ERH3_Q32	,273	,347	,753
ERH4_Q44	,393	,382	,692

**Table 4.33: KMO and Bartlett’s Test for “Self-Management Leadership Behaviors” (Q22
& Q28 excluded)**

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,905
Approx. Chi-Square		3211,097
Bartlett's Test of Sphericity	df	190
	Sig.	,000

**Table 4.34: Rotated Component Matrix for “Self-Management Leadership Behaviors”
(Q22 & Q28 excluded)**

Rotated Component Matrix^a			
	Component		
	1	2	3
ESR3_Q38	,889	,081	,209
ESR4_Q50	,860	,201	,240
ESG2_Q20	,782	,205	,183
ESE1_Q12	,770	,314	,115
ESG3_Q34	,764	,092	,345
ESR1_Q10	,704	,328	,154
ESG4_Q46	,620	,382	,363
ESO1_Q14	,615	,374	,411
ESR2_Q24	,611	,287	,260
ESO3_Q42	,607	,207	,430
ESG1_Q6	,586	,570	,097
ERH1_Q4	,106	,845	,160
ERH3_Q32	,274	,759	,353
ERH2_Q18	,314	,756	,232
ERH4_Q44	,397	,691	,377
ESC3_Q36	,103	,414	,791
ESC4_Q48	,188	,366	,772
ESE2_Q26	,448	,153	,717
ESE3_Q40	,444	-,021	,708
ESC1_Q8	,215	,413	,638

4.2.2.3 Reliability analysis for the second factor of self-management leadership behaviors

The reliability analysis for the second factor of self-management leadership behaviors is shown in Table 4.35. As seen in the table, the Cronbach’s Alpha value is 0,894 and deletion of any question in the list results in a slight decline in this value. Thus, this factor is reliable and all the questions should be assessed together.

Table 4.35: Reliability Analysis for the second factor of “Self-Management Leadership Behaviors”

Reliability Statistics				
Cronbach's Alpha	N of Items			
,894	4			
Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ERH1_Q4	8,54	8,149	,701	,890
ERH2_Q18	8,74	8,247	,798	,854
ERH3_ Q32	8,74	8,001	,803	,850
ERH4_Q44	8,60	8,141	,771	,862

Table 4.36: Reliability Analysis for the third factor of “Self-Management Leadership Behaviors”

Reliability Statistics				
Cronbach's Alpha	N of Items			
,946	11			
Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ESG1_Q6	30,39	82,004	,702	,943
ESG2_Q20	30,27	81,582	,783	,940
ESG3_Q34	30,19	82,277	,775	,940
ESG4_Q46	30,50	82,732	,764	,941
ESR1_Q10	30,44	81,947	,729	,942
ESR2_Q24	30,19	84,668	,644	,945
ESR3_Q38	30,58	80,402	,838	,938
ESR4_Q50	30,28	79,688	,873	,936
ESE1_Q12	30,30	80,882	,776	,940
ESO1_Q14	30,34	81,881	,774	,940
ESO3_Q42	30,41	84,154	,705	,943

4.2.2.4 Reliability analysis for the third factor of self-management leadership behaviors

The reliability analysis for the third factor of self-management leadership behaviors is shown in Table 4.36. As seen in the table, the Cronbach's Alpha value is 0,946 and deletion of any question in the list declines this value slightly. Thus, this factor is reliable and all the questions should be assessed together.

4.2.2.5 Factors of self-management leadership behaviors

As explained in previous sections, the first factor includes questions related with encouraging self-criticism and self-expectation. Thus, it will be entitled as "Encouraging self-criticism/expectation". The second factor contains only questions of "Encouraging rehearsal" dimension in the research model and it will not be redefined. The third factor includes questions about encouraging self-goal-setting, encouraging self-reinforcement, encouraging self-expectation and encouraging self-observation/evaluation. Thus, it will be entitled as "Encouraging self-performance management". Consequently, the new factors of self-management leadership behaviors are "Encouraging self-criticism/expectation", "Encouraging rehearsal", and "Encouraging self-performance management".

4.2.3 Factor and Reliability Analyses for Employee Engagement

4.2.3.1 Factor analysis for employee engagement

In the research model, employee engagement has two dimensions which are job engagement and organizational engagement. The questions measuring these dimensions have been listed in Table 3.2 in the previous section. Factor analysis is done in SPSS to define the new dimensions and associated questions. As shown in Table 4.37, p value is 0,000 and KMO value is 0,875. Thus, the correlation between variables is sufficient to

do factor analysis and relevance of the variables to factor analysis is very good. However, the value of factor loading for question 39 is 0,480 (Table 4.38), which is less than 0,50 and not acceptable for factor analysis. Therefore, factor analysis is repeated without this question.

Table 4.37: KMO and Bartlett's Test for "Employee Engagement"

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,875
Approx. Chi-Square		1237,339
Bartlett's Test of Sphericity	df	55
	Sig.	,000

Table 4.38: Rotated Component Matrix for "Employee Engagement"

Rotated Component Matrix ^a		
	Component	
	1	2
OE5_Q43	,918	,147
OE6_Q51	,914	,236
JE5_Q47	,851	,311
OE4_Q31	,830	,236
OE2_Q7	,793	,140
OE1_Q1	,781	-,102
OE3_Q19_R	,564	-,057
JE2_Q15	,104	,768
JE1_Q5	,300	,755
JE3_Q27	,036	,717
JE4_Q39_R	-,004	,480

The new KMO value is 0,879 (Table 4.39). Two components are extracted (Table 4.40) after the exclusion of question 39, which will be the factors of employee engagement. Before entitling these factors and calculating their factor values, reliability analyses should be completed.

Table 4.39: KMO and Bartlett's Test for "Employee Engagement" (Q39 excluded)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,879
Approx. Chi-Square		1216,241
Bartlett's Test of Sphericity	df	45
	Sig.	,000

Table 4.40: Rotated Component Matrix for "Employee Engagement" (Q39 excluded)

Rotated Component Matrix ^a		
	Component	
	1	2
OE5_Q43	,913	,175
OE6_Q51	,904	,271
JE5_Q47	,833	,362
OE4_Q31	,819	,271
OE2_Q7	,796	,141
OE1_Q1	,784	-,081
OE3_Q19_R	,571	-,056
JE3_Q27	-,007	,784
JE2_Q15	,082	,765
JE1_Q5	,276	,764

4.2.3.2 Reliability analysis for the first factor of employee engagement

The reliability analysis for the first factor of employee engagement is illustrated in Table 4.41. The value of Cronbach's Alpha is 0,920 as seen in the table. Therefore, this factor is reliable. However, if question 19 is deleted, the Cronbach's Alpha value becomes 0,936 by increasing slightly. Thus, this question should be excluded from the scope of the research in order to increase reliability. Reliability analysis is repeated without this question. As seen in Table 4.42, deletion of question 1 increases the Cronbach's Alpha value to 0,942 this time. Therefore, this question should also be excluded from the scope of the research and reliability analysis should be repeated.

Table 4.41: Reliability Analysis for the first factor of “Employee Engagement”

Reliability Statistics				
Cronbach's Alpha	N of Items			
,920	7			
Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OE1_Q1	19,73	38,320	,664	,917
OE2_Q7	20,16	36,802	,729	,911
OE3_ Q19_R	19,73	40,845	,448	,936
OE4_ Q31	20,08	36,206	,794	,904
OE5_Q43	20,10	34,169	,892	,893
OE6_Q51	20,23	33,163	,910	,891
JE5_Q47	20,10	34,102	,838	,899

Table 4.42: Reliability Analysis for the first factor of “Employee Engagement” (Q19 excluded)

Reliability Statistics				
Cronbach's Alpha	N of Items			
,936	6			
Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OE1_Q1	16,11	31,395	,661	,942
OE2_Q7	16,53	29,937	,734	,934
OE4_ Q31	16,46	29,177	,821	,923
OE5_Q43	16,48	27,636	,893	,914
OE6_Q51	16,61	26,731	,911	,911
JE5_Q47	16,48	27,480	,846	,920

As seen in Table 4.43, the new value of the Cronbach's Alpha is 0,942 and deletion of question 7 increases this value to 0,949. The result of the reliability analysis after this question is deleted is shown in Table 4.44. As seen in the table, deletion of any

remaining question decreases this value. Thus, this factor is reliable and all the remaining questions should be assessed together. Factor analysis should be conducted again without questions 1, 7, 19 and 39.

Table 4.43: Reliability Analysis for the first factor of “Employee Engagement” (Q1 & Q19 excluded)

Reliability Statistics				
Cronbach's Alpha	N of Items			
,942	5			
Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OE2_Q7	12,91	22,003	,720	,949
OE4_ Q31	12,83	21,212	,824	,931
OE5_Q43	12,86	19,945	,893	,919
OE6_Q51	12,99	19,162	,913	,915
JE5_Q47	12,86	19,610	,866	,924

Table 4.44: Reliability Analysis for the first factor of “Employee Engagement” (Q1, Q7 & Q19 excluded)

Reliability Statistics				
Cronbach's Alpha	N of Items			
,949	4			
Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OE4_Q31	9,63	13,496	,837	,945
OE5_Q43	9,66	12,484	,909	,923
OE6_Q51	9,79	12,067	,899	,926
JE5_Q47	9,66	12,305	,866	,936

The results of the factor analysis are illustrated in Table 4.45, Table 4.46, and Table 4.47 after deletion of aforementioned questions. As seen in Table 4.45, KMO value has become 0,842. As seen in Table 4.47, the number of components extracted and questions related with factors do not change after the exclusion of the questions. However, the percentage of the components to explain the total variance has increased to 77,065 (Table 4.46).

Table 4.45: KMO and Bartlett's Test for "Employee Engagement" (Q1, Q7, Q19 & Q39 excluded)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,842
Approx. Chi-Square		890,229
Bartlett's Test of Sphericity	df	21
	Sig.	,000

Table 4.46: Total Variance Explained for "Employee Engagement" (Q1, Q7, Q19 & Q39 excluded)

Total Variance Explained						
Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3,981	56,870	56,870	3,482	49,742	49,742
2	1,414	20,194	77,065	1,913	27,323	77,065
3	,620	8,861	85,926			
4	,490	7,002	92,928			
5	,252	3,598	96,526			
6	,132	1,882	98,408			
7	,111	1,592	100,000			

Table 4.47: Rotated Component Matrix for “Employee Engagement” (Q1, Q7, Q19 & Q39 excluded)

Rotated Component Matrix ^a		
	Component	
	1	2
OE5_Q43	,913	,175
OE6_Q51	,904	,271
OE4_Q31	,833	,362
JE5_Q47	,819	,271
JE2_Q15	-,007	,784
JE3_Q27	,082	,765
JE1_Q5	,276	,764

4.2.3.3 Reliability analysis for the second factor of employee engagement

The reliability analysis for the second factor is shown in Table 4.48. As seen in the table, the Cronbach’s Alpha value is 0,692, which is quite low compared to the values in previous analyses. However, it is greater than 0,60 and acceptable for reliability when the amount of questions is low. Deletion of any question in the list decreases this value. Therefore, this factor is considered as reliable and all the questions should be assessed together.

Table 4.48: Reliability Analysis for the second factor of “Employee Engagement”

Reliability Statistics				
Cronbach's Alpha	N of Items			
,692	3			
Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
JE1_Q5	7,23	2,884	,537	,560
JE2_Q15	7,19	3,171	,513	,595
JE3_Q27	7,87	2,820	,477	,644

4.2.3.4 Factors of employee engagement

As explained in previous sections, the first factor includes three questions of “Organizational Engagement” dimension and one question of “Job Engagement” dimension. Therefore, it will be entitled as “Organizational Engagement”. The second factor contains only questions of “Job Engagement” dimension in the research model and it will not be redefined. Thus, the factors comply with the theoretical dimensions of employee engagement.

4.3 NORMALITY TESTS

In statistics, normality tests are used to determine if a data set is distributed normally. These tests are mostly used in researches to establish that sample data set is drawn from a normally distributed population. Due to the fact that normal distribution is the first basic assumption to use many parametric tests (Durmuş, Yurtkoru and Çinko 2013, p.65), it is essential to assess the normality of data in a research. In statistics several methods are used for this purpose. Kolmogorov-Smirnov and Shapiro-Wilk tests are the most widely used normality tests. In order for a variable to be normally distributed, *p*-value (significance level) of either Kolmogorov-Smirnov test or Shapiro-Wilk test for this variable should be greater than 0,05 (Durmuş, Yurtkoru and Çinko 2013, p.66). However, these tests might not be enough. Q-Q and Box-and-whisker plots should also be examined. These tests are applied to the data with SPSS Statistics. The questions eliminated in factor and reliability analyses are not included in normality tests. *p*-values of Kolmogorov-Smirnov and Shapiro-Wilk tests for all questions have been found to be 0,000, which means that normality assumption is failed. However, the distribution is approximately normal according to Q-Q and Box-and-whisker plots. Therefore, sample data set in this research is assumed to be distributed normally and parametric tests are used in order to analyze sample data.

4.4 TESTS OF HYPOTHESES

The research hypotheses will be tested by using regression analysis. In statistics, regression analysis is used to determine how a variable is explained with another variable or other variables. In other words, it is a method used to estimate the relationship between a dependent variable and one or more independent variables. In the following sections, first, the effect of the main dimensions of self-management on the dimensions of employee engagement will be analyzed with simple linear regression analysis. Then the effect of factors found by factor analysis will be examined with multiple regression analysis.

4.4.1 Test of Hypothesis 1 with Regression Analysis

Hypothesis 1 is indicated below.

H₁₀: Self-managed work environment does not affect job engagement.

H₁₁: Self-managed work environment affects job engagement.

This hypothesis is tested with simple linear regression. As shown in Table 4.49, F value is 45,399 and *p* value (sig.) is 0,000, which means that H₁₀ is rejected. Thus the first hypothesis is accepted meaning that self-managed work environment affects job engagement.

Table 4.49: ANOVA table for hypothesis 1 (simple linear regression)

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23,308	1	23,308	45,399	,000 ^b
	Residual	91,386	178	,513		
	Total	114,694	179			

As illustrated in Table 4.50, p values of self-managed work environment and job engagement are 0,000 which is less than 0,05. Therefore, these two variables will be in the research model.

Table 4.50: Coefficients table for hypothesis 1 (simple linear regression)

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1,714	,302		5,684	,000
1 Self-Managed Work Environment	,574	,085	,451	6,738	,000

As shown in Table 4.51, the explanatory power of this model is 0,203, which means that 20,3 percent of the variations in job engagement can be explained with self-managed work environment.

Table 4.51: Model summary for hypothesis 1 (simple linear regression)

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,451 ^a	,203	,199	,71652

Normality of residuals and homoscedasticity of residual variances should be tested after regression analysis. As seen in Figure 4.1 and Figure 4.2, residuals are distributed normally and there is no homoscedasticity issue. Thus, normality and homoscedasticity assumptions are also met.

In order to test the effect of self-managed work environment factors on job engagement, multiple regression analysis is used. The aim is to assess how autonomy and trust, skill

variety, job dynamism, feedback from job and feedback from supervisors affect job engagement.

Figure 4.1: Normal P-P plot for hypothesis 1 (simple linear regression)

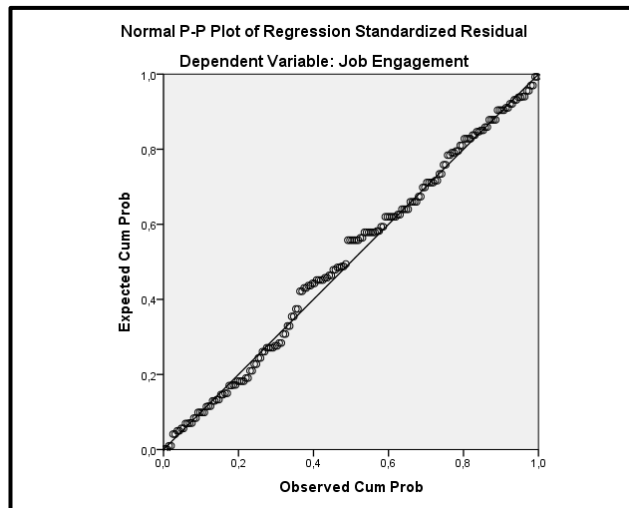
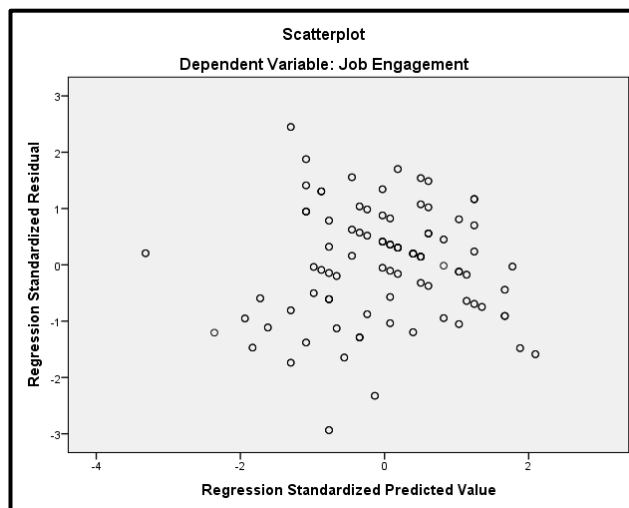


Figure 4.2: Scatterplot for hypothesis 1 (simple linear regression)



As shown in Table 4.52, F value is 20,208 and p value (sig.) is 0,000, which means that the model is statistically significant and dependent variable can be estimated by at least

one of the independent variables. In other words, at least one of the self-managed work environment sub-dimensions affects job engagement significantly.

Table 4.52: ANOVA table for hypothesis 1 (multiple regression)

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	42,134	5	8,427	20,208	,000 ^b
Residual	72,560	174	,417		
Total	114,694	179			

Table 4.53: Coefficients table for hypothesis 1 (multiple regression)

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	1,353	,289		4,679
	Autonomy and Trust	-,045	,075	-,046	-,599
	Skill Variety	,411	,061	,495	6,721
	Job Dynamism	,079	,060	,090	1,318
	Feedback from Job	,239	,072	,234	3,336
	Feedback from Supervisors	-,063	,058	-,077	-1,100
Coefficients ^a					
Model		Sig.	Collinearity Statistics		
			Tolerance	VIF	
1	(Constant)	,000			
	Autonomy and Trust	,550	,615	1,625	
	Skill Variety	,000	,671	1,489	
	Job Dynamism	,189	,784	1,276	
	Feedback from Job	,001	,736	1,358	
	Feedback from Supervisors	,273	,741	1,349	

As illustrated in Table 4.53, *p* values of autonomy and trust, job dynamism, and feedback from supervisors are greater than 0,05. Thus, these sub-dimensions do not

have significant effect on the research model. On the other hand, p values of skill variety and feedback from job are less than 0,05, which means that these variables have significant effect on the research model. Moreover, as indicated with beta coefficients, they both affect job engagement positively and the effect of skill variety is more than feedback from job since it has a larger beta coefficient value.

As shown in Table 4.54, 36,7 percent of the variations in job engagement can be explained with the sub-dimensions of self-managed work environment.

Table 4.54: Model summary for hypothesis 1 (multiple regression)

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,606 ^a	,367	,349	,64576

Table 4.53, Table 4.55, Figure 4.3, Figure 4.4 and the correlation matrix which is attached as Appendix 2 help to test assumptions for multiple regression analysis. Although correlation between independent variables is significant at the 0,01 level (2-tailed) according to correlation matrix and they are positively related, it might be assumed that there is no multicollinearity between them due to the fact that the values of correlation coefficients are less than 0,70. However, other criteria should be controlled as well for multicollinearity assumption.

As shown in Table 4.53, the largest VIF value, which is 1,625, is less than 10. In addition, as shown in Table 4.55, the ratio of the largest eigenvalue to the lowest one is 3,81 (0,080/0,021), which is less than 100. Thus, multicollinearity assumption is met, which means that there is no multicollinearity between the independent variables. As seen in Figure 4.3 and Figure 4.4, residuals are distributed normally and there is no homoscedasticity issue. Thus, normality and homoscedasticity assumptions are also met.

Table 4.55: Collinearity diagnostics for hypothesis 1 (multiple regression)

Collinearity Diagnostics ^a								
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				(Constant)	Autonomy and Trust	Skill Variety	Job Dynamism	Feedback from Job Feedback from Supervisors
1	1	5,803	1,000	,00	,00	,00	,00	,00
	2	,080	8,521	,01	,00	,01	,10	,72
	3	,039	12,136	,03	,03	,42	,06	,05
	4	,032	13,539	,04	,29	,28	,44	,22
	5	,025	15,305	,00	,67	,27	,08	,00
	6	,021	16,523	,91	,02	,00	,32	,00

Figure 4.3: Normal P-P plot for hypothesis 1 (multiple regression)

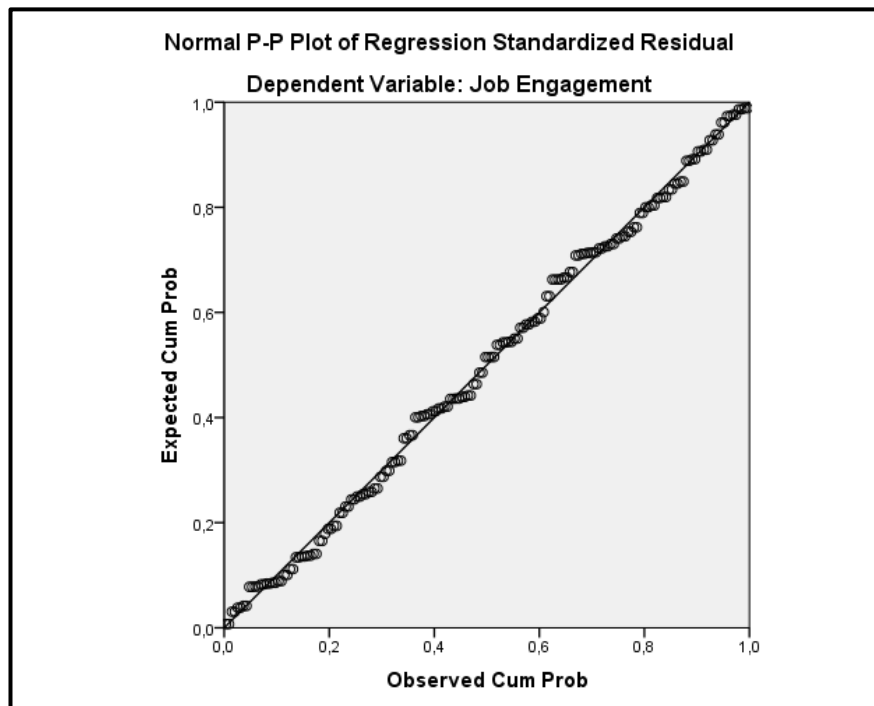
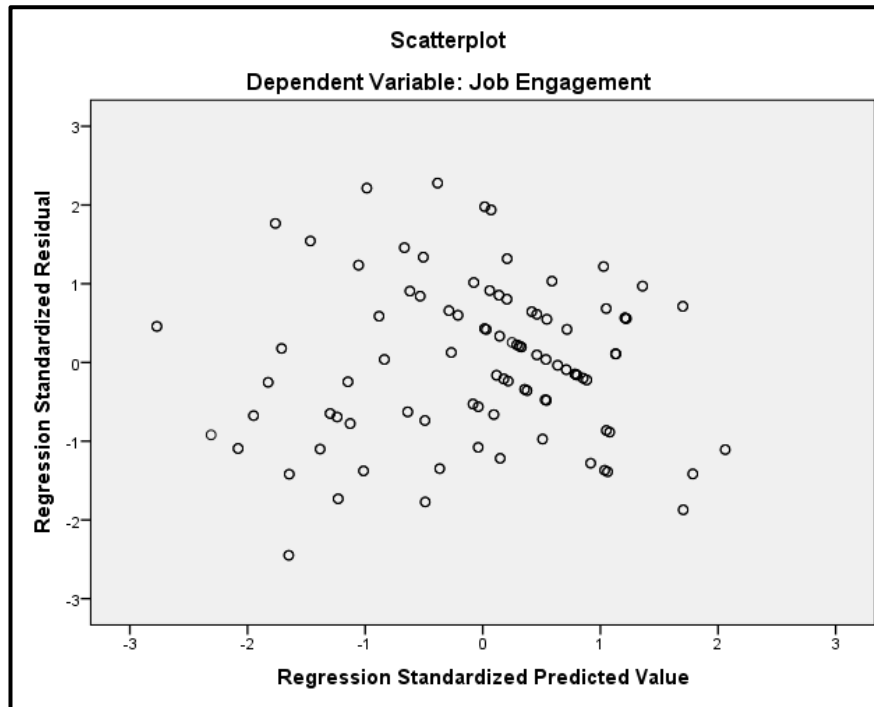


Figure 4.4: Scatterplot for hypothesis 1 (multiple regression)



4.4.2 Test of Hypothesis 2 with Regression Analysis

Hypothesis 2 is indicated below.

H₂₀: Self-managed work environment does not affect organizational engagement.

H₂₁: Self-managed work environment affects organizational engagement.

This hypothesis is tested with simple linear regression. As shown in Table 4.56, F value is 197,318 and *p* value (sig.) is 0,000, which means that H₂₀ is rejected. Thus the second hypothesis is accepted as well meaning that self-managed work environment affects organizational engagement.

As illustrated in Table 4.57, *p* values of self-managed work environment and organizational engagement are 0,000 which is less than 0,05. Therefore, these two variables will be in the research model.

Table 4.56: ANOVA table for hypothesis 2 (simple linear regression)

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	129,416	1	129,416	197,318	,000 ^b
Residual	116,746	178	,656		
Total	246,161	179			

Table 4.57: Coefficients table for hypothesis 2 (simple linear regression)

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-1,486	,341		-4,358	,000
Self-Managed Work Environment	1,353	,096	,725	14,047	,000

As shown in Table 4.58, the explanatory power of this model is 0,526, which means that 52,6 percent of the variations in organizational engagement can be explained with self-managed work environment.

Table 4.58: Model summary for hypothesis 2 (simple linear regression)

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,725 ^a	,526	,523	,80986

Normality of residuals and homoscedasticity of residual variances should be tested after regression analysis. As seen in Figure 4.5 and Figure 4.6, residuals are distributed normally and there is no homoscedasticity issue. Thus, normality and homoscedasticity assumptions are also met.

Figure 4.5: Normal P-P plot for hypothesis 2 (simple linear regression)

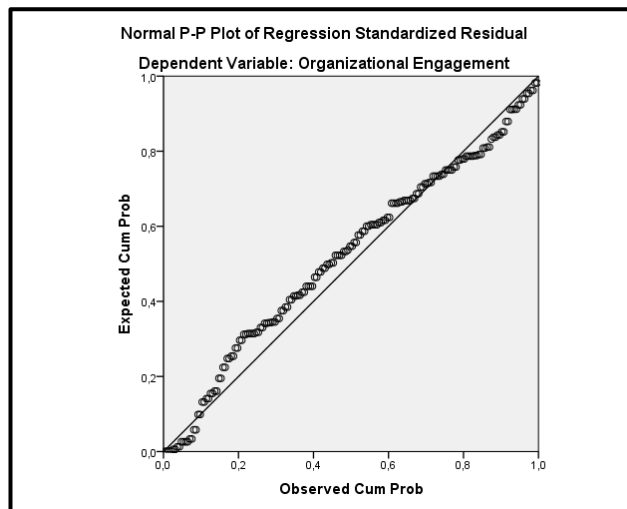
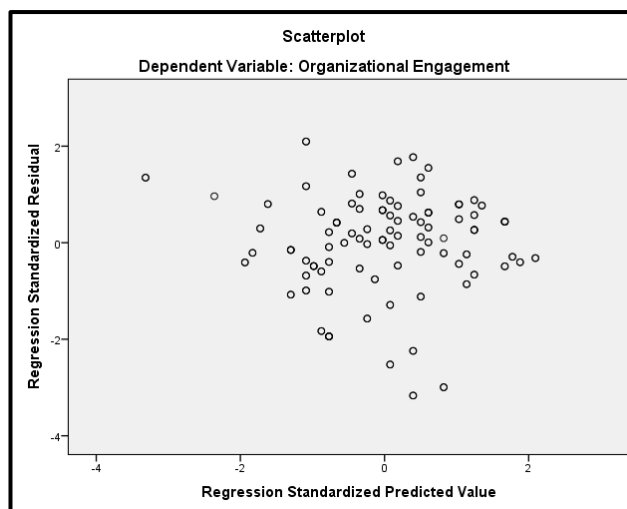


Figure 4.6: Scatterplot for hypothesis 2 (simple linear regression)



In order to test the effect of self-managed work environment factors on organizational engagement, multiple regression analysis is used. The aim is to assess how autonomy and trust, skill variety, job dynamism, feedback from job and feedback from supervisors affect organizational engagement.

As shown in Table 4.59, F value is 62,820 and *p* value (sig.) is 0,000, which means that the model is statistically significant and dependent variable can be estimated by at least one of the independent variables. In other words, at least one of the self-managed work environment sub-dimensions affects organizational engagement significantly.

Table 4.59: ANOVA table for hypothesis 2 (multiple regression)

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	158,409	5	31,682	62,820	,000 ^b
Residual	87,752	174	,504		
Total	246,161	179			

Table 4.60: Coefficients table for hypothesis 2 (multiple regression)

Coefficients ^a				
Model	Unstandardized Coefficients		Standardized Coefficients	t
	B	Std. Error	Beta	
1 (Constant)	-,833	,318		-2,621
Autonomy and Trust	,903	,082	,634	10,985
Skill Variety	,244	,067	,201	3,630
Job Dynamism	,039	,066	,030	,589
Feedback from Job	-,239	,079	-,160	-3,030
Feedback from Supervisors	,239	,063	,198	3,775
Coefficients ^a				
Model	Sig.	Collinearity Statistics		
		Tolerance	VIF	
1 (Constant)	,010			
Autonomy and Trust	,000	,615	1,625	
Skill Variety	,000	,671	1,489	
Job Dynamism	,556	,784	1,276	
Feedback from Job	,003	,736	1,358	
Feedback from Supervisors	,000	,741	1,349	

As illustrated in Table 4.60, *p* value of job dynamism is greater than 0,05. Thus, this sub-dimension does not have significant effect on the research model. On the other hand, *p* values of the remaining sub-dimensions are less than 0,05, which means that these variables have significant effect on the research model. Moreover, as indicated with beta coefficients, autonomy and trust, skill variety, and feedback from supervisors affect organizational engagement positively and the effect of autonomy and trust is more than the others since it has a larger beta coefficient value. Feedback from job, on the other hand, has a negative effect on organizational engagement.

As shown in Table 4.61, 64,4 percent of the variations in organizational engagement can be explained with the sub-dimensions of self-managed work environment.

Table 4.61: Model summary for hypothesis 2 (multiple regression)

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,802 ^a	,644	,633	,71016

Multicollinearity, normality and homoscedasticity assumptions need to be tested for multiple regression analysis. As analyzed in previous section, there is no multicollinearity between the independent variables. As seen in Figure 4.7 and Figure 4.8, residuals are distributed normally and there is no homoscedasticity issue. Thus, normality and homoscedasticity assumptions are also met.

4.4.3 Test of Hypothesis 3 with Regression Analysis

Hypothesis 3 is indicated below.

H3₀: Self-management leadership behaviors do not affect job engagement.

H3₁: Self-management leadership behaviors affect job engagement.

Figure 4.7: Normal P-P plot for hypothesis 2 (multiple regression)

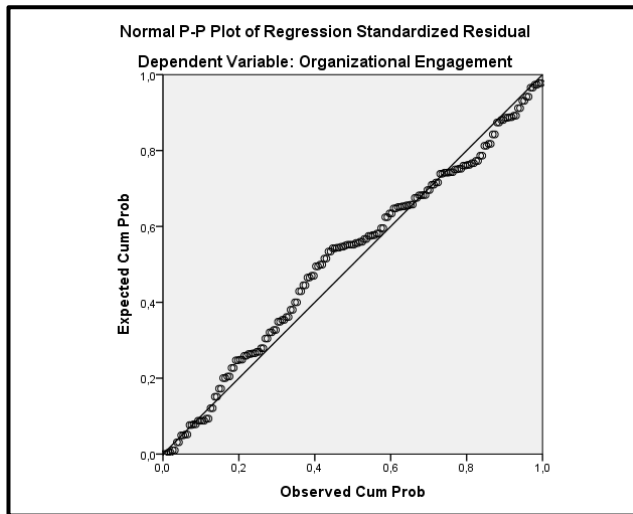
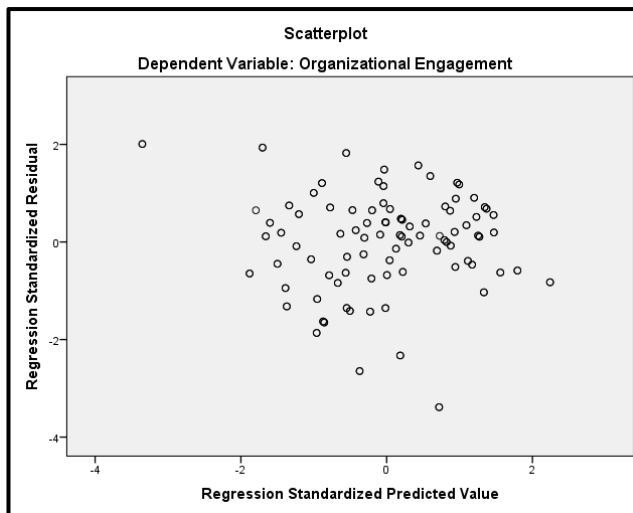


Figure 4.8: Scatterplot for hypothesis 2 (multiple regression)



This hypothesis is tested with simple linear regression. As shown in Table 4.62, F value is 5,833 and p value (sig.) is 0,017, which means that H_{3_0} is rejected. Thus the third hypothesis is accepted as well, meaning that self-management leadership behaviors affect job engagement.

Table 4.62: ANOVA table for hypothesis 3 (simple linear regression)

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	3,639	1	3,639	5,833	,017 ^b
Residual	111,054	178	,624		
Total	114,694	179			

As illustrated in Table 4.63, *p* values of self-managed work environment and organizational engagement are less than 0,05. Therefore, these two variables will be in the research model.

Table 4.63: Coefficients table for hypothesis 3 (simple linear regression)

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3,173	,232		13,692	,000
Self-Managed Work Environment	,178	,074	,178	2,415	,017

As shown in Table 4.64, the explanatory power of this model is 0,032, which means that 3,2 percent of the variations in job engagement can be explained with self-management leadership behaviors. This ratio is quite low compared the ones in the previous hypotheses.

Table 4.64: Model summary for hypothesis 3 (simple linear regression)

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,178 ^a	,032	,026	,78987

Normality of residuals and homoscedasticity of residual variances should be tested after regression analysis. As seen in Figure 4.9 and Figure 4.10, residuals are distributed normally and there is no homoscedasticity issue. Thus, normality and homoscedasticity assumptions are also met.

Figure 4.9: Normal P-P plot for hypothesis 3 (simple linear regression)

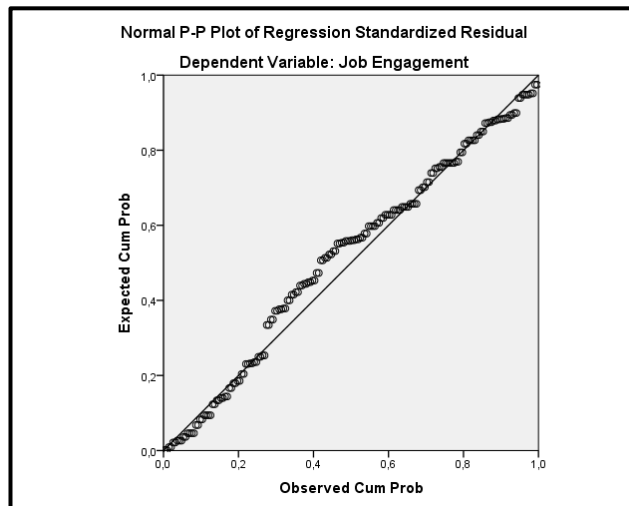
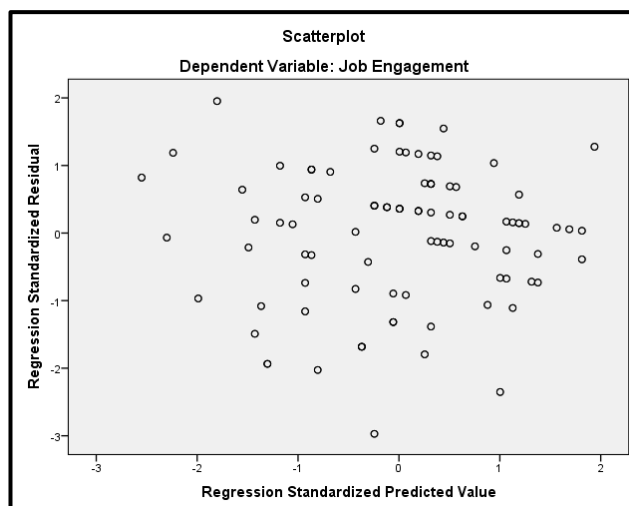


Figure 4.10: Scatterplot for hypothesis 3 (simple linear regression)



In order to test the effect of self-management leadership behaviors factors on job engagement, multiple regression analysis is used. The aim is to assess how encouraging self-performance management, encouraging rehearsal, and encouraging self-criticism/expectation affect job engagement.

As shown in Table 4.65, F value is 3,624 and *p* value (sig.) is 0,014, which means that the model is statistically significant and dependent variable can be estimated by at least one of the independent variables. In other words, at least one of the self-management leadership behaviors sub-dimensions affects job engagement.

Table 4.65: ANOVA table for hypothesis 3 (multiple regression)

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	6,673	3	2,224	3,624	,014 ^b
Residual	108,021	176	,614		
Total	114,694	179			

Table 4.66: Coefficients table for hypothesis 3 (multiple regression)

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	3,111	,239		12,999
	Encouraging Self-Performance Management	,156	,096	,176	1,619
	Encouraging Rehearsal	-,158	,091	-,184	-1,743
	Encouraging Self-Criticism/Expectation	,184	,103	,193	1,785
Coefficients ^a					
Model		Sig.	Collinearity Statistics		
			Tolerance	VIF	
1	(Constant)	,000			
	Encouraging Self-Performance Management	,107	,454	2,202	
	Encouraging Rehearsal	,083	,478	2,092	
	Encouraging Self-Criticism/Expectation	,076	,459	2,179	

As illustrated in Table 4.66, *p* values of all sub-dimensions are greater than 0,05. Thus, they do not have significant effect on the research model. Although the sub-dimensions of self-management leadership behaviors affect job engagement, their effect on the model is not significant. As seen in the table, the values of their beta coefficients are very low. Moreover, as shown in Table 4.67, they only explain 5,8 percent of the variations in job engagement.

Table 4.67: Model summary for hypothesis 3 (multiple regression)

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,241 ^a	,058	,042	,78342

Table 4.66, Table 4.68, Figure 4.11, Figure 4.12 and the correlation matrix help to test assumptions for multiple regression analysis. As explained in previous sections, it might be assumed that there is no multicollinearity between the independent variables due to the fact that the values of correlation coefficients are less than 0,70. However, other criteria should be controlled as well for multicollinearity assumption.

Table 4.68: Collinearity diagnostics for hypothesis 3 (multiple regression)

Collinearity Diagnostics ^a							
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Encouraging Self-Performance Management	Encouraging Rehearsal	Encouraging Self-Criticism/Expectation
1	1	3,898	1,000	,00	,00	,00	,00
	2	,051	8,766	,78	,05	,24	,00
	3	,029	11,565	,09	,60	,70	,04
	4	,022	13,353	,13	,35	,06	,96

As shown in Table 4.66, the largest VIF value, which is 2,202, is less than 10. In addition, as shown in Table 4.68, the ratio of the largest eigenvalue to the lowest one is 2,32 (0,051/0,022), which is less than 100. Thus, multicollinearity assumption is met, which means that there is no multicollinearity between the independent variables. As seen in Figure 4.11 and Figure 4.12, residuals are distributed normally and there is no homoscedasticity issue. Thus, normality and homoscedasticity assumptions are also met.

Figure 4.11: Normal P-P plot for hypothesis 3 (multiple regression)

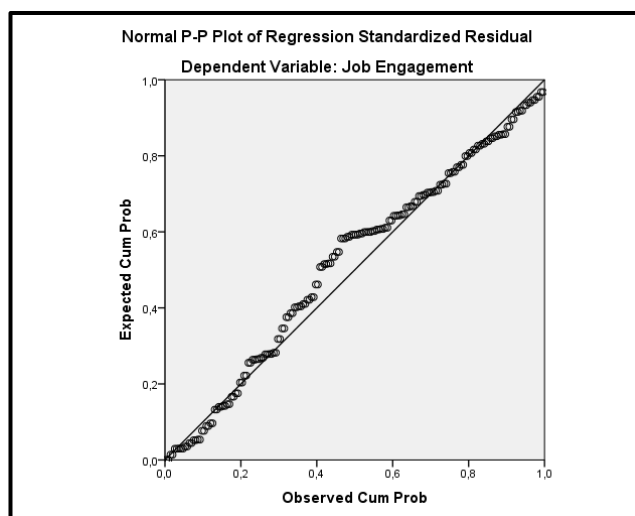
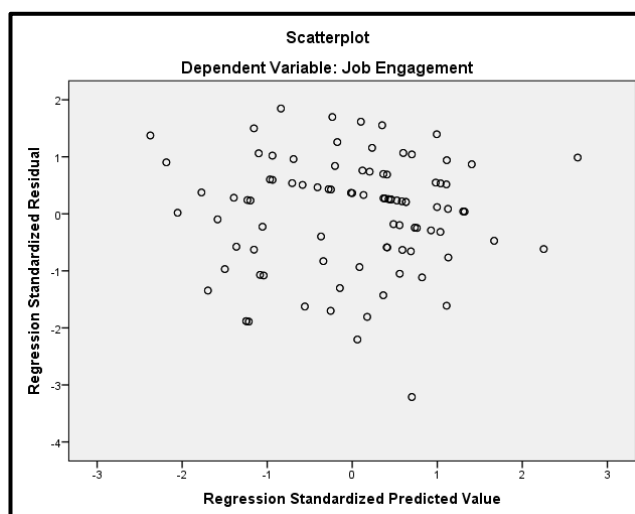


Figure 4.12: Scatterplot for hypothesis 3 (multiple regression)



4.4.4 Test of Hypothesis 4 with Regression Analysis

Hypothesis 4 is indicated below.

H₄₀: Self-management leadership behaviors do not affect organizational engagement.

H₄₁: Self-management leadership behaviors affect organizational engagement.

This hypothesis is tested with simple linear regression. As shown in Table 4.69, F value is 85,900 and *p* value (sig.) is 0,000, which means that H₄₀ is rejected. Thus, the fourth hypothesis is accepted as well meaning that self-management leadership behaviors affect organizational engagement.

As illustrated in Table 4.70, *p* values of self-management leadership behaviors and organizational engagement are less than 0,05. Therefore, these two variables will be in the research model.

Table 4.69: ANOVA table for hypothesis 4 (simple linear regression)

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	80,126	1	80,126	85,900	,000 ^b
Residual	166,035	178	,933		
Total	246,161	179			

Table 4.70: Coefficients table for hypothesis 4 (simple linear regression)

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	,687	,283		2,425	,016
Self-Managed Work Environment	,834	,090	,571	9,268	,000

As shown in Table 4.71, the explanatory power of this model is 0,326, which means that 32,6 percent of the variations in organizational engagement can be explained with self-management leadership behaviors.

Table 4.71: Model summary for hypothesis 4 (simple linear regression)

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,571 ^a	,326	,322	,96581

Normality of residuals and homoscedasticity of residual variances should be tested after regression analysis. As seen in Figure 4.13 and Figure 4.14, residuals are distributed normally and there is no homoscedasticity issue. Thus, normality and homoscedasticity assumptions are also met.

Figure 4.13: Normal P-P plot for hypothesis 4 (simple linear regression)

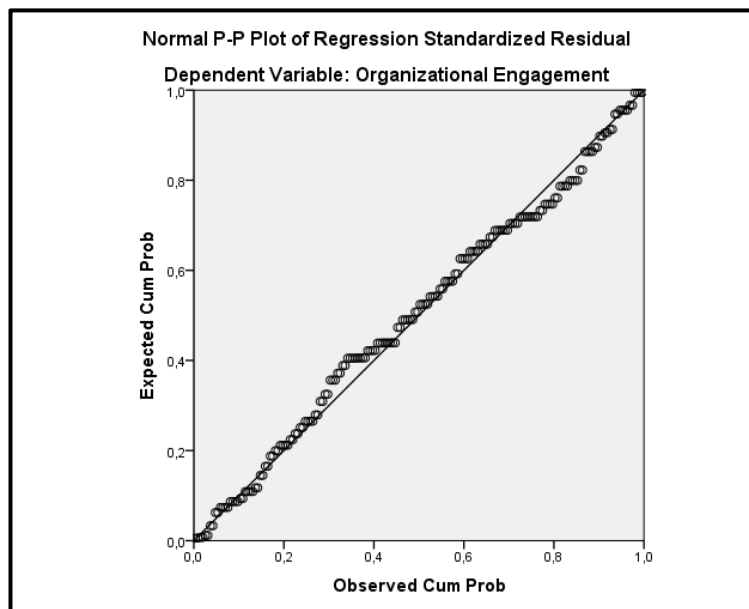
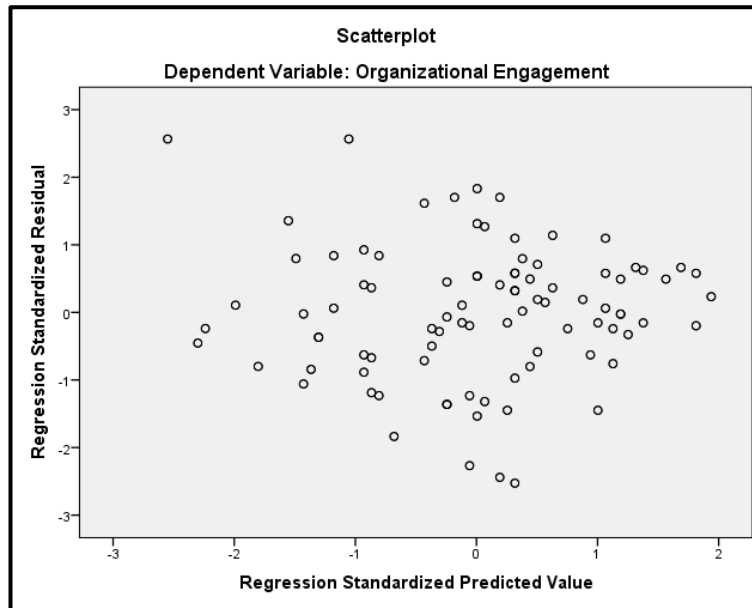


Figure 4.14: Scatterplot for hypothesis 4 (simple linear regression)



In order to test the effect of self-management leadership behaviors factors on organizational engagement, multiple regression analysis is used. The aim is to assess how encouraging self-performance management, encouraging rehearsal, and encouraging self-criticism/expectation affect organizational engagement.

As shown in Table 4.72, F value is 51,523 and *p* value (sig.) is 0,000, which means that the model is statistically significant and dependent variable can be estimated by at least one of the independent variables. In other words, at least one of the self-management leadership behaviors sub-dimensions affects organizational engagement significantly.

Table 4.72: ANOVA table for hypothesis 4 (multiple regression)

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	115,101	3	38,367	51,523	,000 ^b
Residual	131,060	176	,745		
Total	246,161	179			

Table 4.73: Coefficients table for hypothesis 4 (multiple regression)

Coefficients ^a				
Model	Unstandardized Coefficients		Standardized Coefficients	t
	B	Std. Error	Beta	
1	(Constant)	1,118	,264	4,242
	Encouraging Self-Performance Management	1,107	,106	10,442
	Encouraging Rehearsal	-,061	,100	-,608
	Encouraging Self-Criticism/Expectation	-,336	,113	-,241
Coefficients ^a				
Model		Sig.	Collinearity Statistics	
			Tolerance	VIF
1	(Constant)	,000		
	Encouraging Self-Performance Management	,000	,454	2,202
	Encouraging Rehearsal	,544	,478	2,092
	Encouraging Self-Criticism/Expectation	,003	,459	2,179

As illustrated in Table 4.73, *p* value of encouraging rehearsal is greater than 0,05. Thus, this sub-dimension does not have significant effect on the research model. On the other hand, *p* values of the remaining sub-dimensions are less than 0,05, which means that these variables have significant effect on the research model. Moreover, as indicated with beta coefficients, encouraging self-performance management affects organizational engagement positively while encouraging self-criticism/expectation has a negative effect. The effect of former is more than the latter since it has a larger beta coefficient value. As shown in Table 4.74, 46,8 percent of the variations in organizational engagement can be explained with the sub-dimensions of self-management leadership behaviors.

Table 4.74: Model summary for hypothesis 4 (multiple regression)

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,684 ^a	,468	,459	,86294

Multicollinearity, normality and homoscedasticity assumptions need to be tested for multiple regression analysis. As analyzed in previous section, there is no multicollinearity between the independent variables. As seen in Figure 4.15 and Figure 4.16, residuals are distributed normally and there is no homoscedasticity issue. Thus, normality and homoscedasticity assumptions are also met.

Figure 4.15: Normal P-P plot for hypothesis 4 (multiple regression)

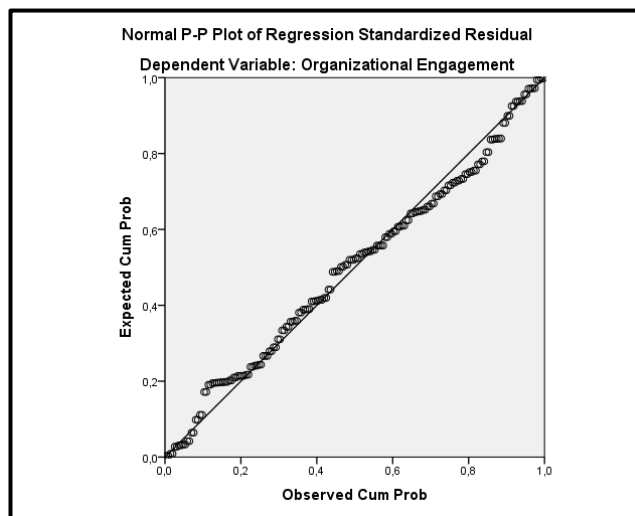
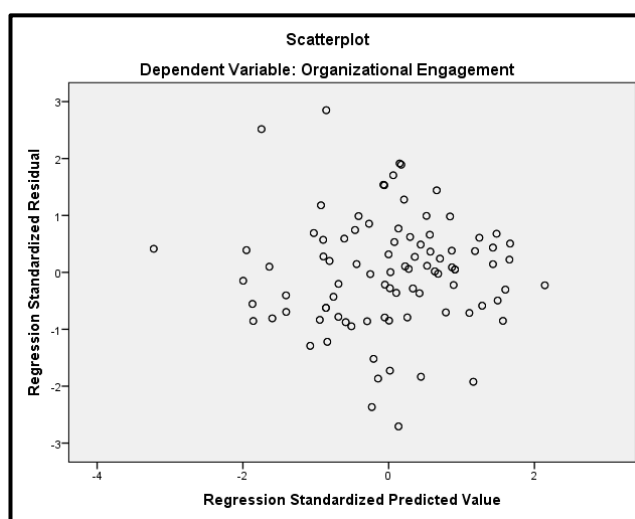


Figure 4.16: Scatterplot for hypothesis 4 (multiple regression)



4.4.5 Results of Hypotheses Tests

Hypotheses of the research are tested in previous sections. According to the results of simple linear regression analyses, hypothesis 1 ($F=45,399$; $p<0,001$), hypothesis 2 ($F=197,318$; $p<0,001$), and hypothesis 4 ($F=85,900$; $p<0,001$) are approved with significant F values and explanatory power (20,3 percent, 52,6 percent, and 32,6 percent respectively). Although hypothesis 3 is approved at 0,05 significance level ($F=5,833$; $p<0,05$), it has a very low explanatory power (3,2 percent). When standardized regression coefficients are examined, it is understood that self-managed work environment has a significant effect on both job engagement ($\beta=0,451$; $p<0,001$) and organizational engagement ($\beta=0,725$; $p<0,001$). Self-management leadership behaviors, on the other hand, has a slight effect on job engagement ($\beta=0,178$; $p<0,05$) and a significant effect on organizational engagement ($\beta=0,571$; $p<0,001$).

The hypotheses have been tested further with multiple regression analysis in order to examine the effects of the sub-dimensions of independent variables on the dependent variables. It is found that not all the sub-dimensions of independent variables affect significantly the dependent variables. According to multiple regression analysis for the first hypothesis, skill variety ($\beta=0,495$; $p<0,001$) and feedback from job ($\beta=0,234$; $p<0,01$) affect job engagement significantly in positive direction. However, autonomy and trust ($p = 0,550$), job dynamism ($p = 0,189$), and feedback from supervisors ($p = 0,273$) do not have a significant effect on it. Similarly, when the second hypothesis is tested with multiple regression analysis, it is found that job dynamism ($p = 0,556$) does not have a significant effect on organizational engagement. However, the other sub-dimensions of self-managed work environment affect it significantly. While autonomy and trust ($\beta=0,634$; $p<0,001$), skill variety ($\beta=0,201$; $p<0,001$), and feedback from supervisors ($\beta=0,198$; $p<0,001$) have a positive effect on organizational engagement, feedback from job ($\beta= -0,160$; $p<0,01$) affects it negatively. Taking the results of the tests for the first and second hypotheses into account, it is meaningful to suggest removing job dynamism from the research model owing to the fact that it does not have a significant effect on either job engagement or organizational engagement.

According to multiple regression analysis for the third hypothesis, encouraging self-performance management ($p = 0,107$), encouraging rehearsal ($p = 0,083$), and encouraging self-criticism/expectation ($p = 0,076$) do not have a significant effect on job engagement. Although the third hypothesis is approved with simple linear regression analysis, it is found that the sub-dimensions of self-management leadership behaviors only explain 5,8 percent of the variations in job engagement with very low beta coefficients. On the other hand, when the fourth hypothesis is tested with multiple regression analysis, it is found that all the sub-dimensions of self-management leadership behaviors except encouraging rehearsal ($p = 0,544$) affect organizational engagement significantly. While encouraging self-performance management ($\beta=0,852$; $p<0,001$) has a positive effect on organizational engagement, encouraging self-criticism/expectation ($\beta= -0,241$; $p<0,01$) affects it negatively. Taking the results of the tests for the third and fourth hypotheses into account, it is meaningful to suggest removing encouraging rehearsal from the research model owing to the fact that it does not have a significant effect on either job engagement or organizational engagement.

To sum up, hypothesis 1 ($F=45,399$; $p<0,001$) is approved with 20,3 % explanatory power and partial effect of the sub-dimensions; hypothesis 2 ($F=197,318$; $p<0,001$) is approved with 52,6 % explanatory power and significant effect of the sub-dimensions; hypothesis 3 is approved at 0,05 significance level ($F=5,833$; $p<0,05$) with a very low explanatory power (3,2 %) and insignificant effect of the sub-dimensions; and hypothesis 4 ($F=85,900$; $p<0,001$) is approved with 32,6 % explanatory power and significant effect of the sub-dimensions. Figure 4.17 illustrates the research model with the effects of the independent variables on dependent ones.

4.5 THE EFFECT OF GENDER ON EMPLOYEE ENGAGEMENT

4.5.1 The Effect of Gender on Job Engagement

The effect of gender on job engagement is analyzed with Independent-Samples T Test. First, equality of variances is tested with Levene's Test. Then, p value of t-test is

evaluated. As seen in Table 4.75, p value of Levene's Test is 0,013 which is less than 0,05. Thus variances are not equal. Since equal variances are not assumed, p value on the second row of t-test is taken into consideration. This value is 0,361 which is greater than 0,05. Thus, the means of job engagement for male and female are equal, which means that gender does not make any difference on job engagement.

Figure 4.17: Research model after tests of hypotheses

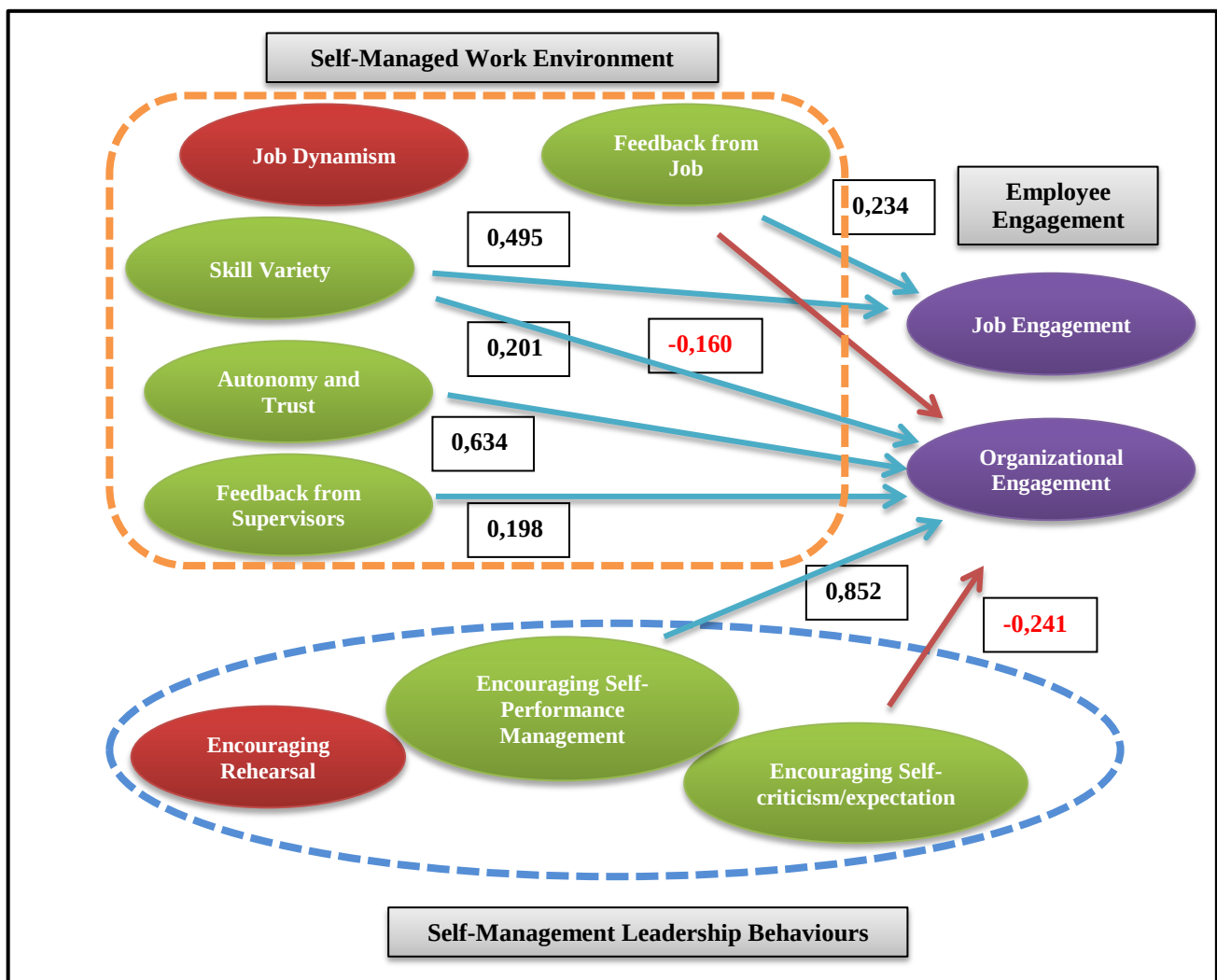


Table 4.75: Independent samples test for the effect of gender on job engagement

Group Statistics					
Gender		N	Mean	Std. Deviation	Std. Error Mean
Job Engagement	Female	67	3,7811	,66300	,08100
	Male	113	3,6755	,87226	,08206
Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Job Engagement	Equal variances assumed	6,281	,013	,855	178
	Equal variances not assumed			,916	167,204
		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	
Job Engagement	Equal variances assumed	,394	,10558	,12352	
	Equal variances not assumed	,361	,10558	,11530	

4.5.2 The Effect of Gender on Organizational Engagement

The effect of gender on organizational engagement is analyzed with Independent-Samples T Test. First, equality of variances is tested with Levene's Test. Then, p value of t-test is evaluated. As seen in Table 4.76, p value of Levene's Test is 0,905 which is greater than 0,05. Thus variances are equal. Since equal variances are assumed, p value on the first row of t-test is taken into consideration. This value is 0,671 which is greater than 0,05. Thus, the means of organizational engagement for male and female are equal, which means that gender does not make any difference on organizational engagement.

Table 4.76: Independent samples test for the effect of gender on organizational engagement

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
Organizational	Female	67	3,2761	1,20929	,14774
Engagement	Male	113	3,1991	1,15494	,10865
Independent Samples Test					
			Levene's Test for Equality of Variances		t-test for Equality of Means
			F	Sig.	t
Organizational	Equal variances assumed		,014	,905	,425
Engagement	Equal variances not assumed				,420
			t-test for Equality of Means		
			df	Sig. (2-tailed)	Mean Difference
Organizational			178	,671	,07700
Engagement	Equal variances not assumed		133,656	,675	,07700

4.6 THE EFFECT OF EDUCATION LEVEL ON EMPLOYEE ENGAGEMENT

4.6.1 The Effect of Education Level on Job Engagement

The effect of education level on job engagement is analyzed with One-Way ANOVA Test. First, equality of variances is tested with Levene's Test. Then, p value of ANOVA test is evaluated. As seen in Table 4.77, p value of Levene's Test is 0,018 which is less than 0,05. Thus, variances are not equal. This means that the result cannot be analyzed with ANOVA test. In this case, Welch and Brown-Forsythe tests are applied. As seen in Table 4.78, p value of these tests are greater than 0,05. Thus, education level does not

make any difference on job engagement. The descriptive statistics are illustrated in Table 4.79.

Table 4.77: Test of homogeneity of variances for the effect of education level on job engagement

Test of Homogeneity of Variances			
Job Engagement			
Levene Statistic	df1	df2	Sig.
3,457	3	176	,018

Table 4.78: Robust tests of equality of means for the effect of education level on job engagement

Robust Tests of Equality of Means				
Job Engagement				
	Statistic ^a	df1	df2	Sig.
Welch	,986	3	11,969	,432
Brown-Forsythe	1,288	3	20,684	,305

4.6.2 The Effect of Education Level on Organizational Engagement

The effect of education level on organizational engagement is analyzed with One-Way ANOVA Test. First, equality of variances is tested with Levene's Test. Then, *p* value of ANOVA test is evaluated. As seen in Table 4.80, *p* value of Levene's Test is 0,304 which is greater than 0,05. Thus, variances are equal. This means that the result can be analyzed with ANOVA test. As seen in Table 4.81, *p* value of ANOVA test is 0,323, which is greater than 0,05. Thus, education level does not make any difference on organizational engagement. The descriptive statistics are illustrated in Table 4.82.

Table 4.79: Descriptive statistics for the effect of education level on job engagement

Descriptives					
Job Engagement					
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean
					Lower Bound
Vocational / Technical School (2-year)	10	3,6667	,58794	,18592	3,2461
Bachelor's Degree	81	3,6049	,90693	,10077	3,4044
Master's Degree	85	3,8275	,70638	,07662	3,6751
Doctorate Degree	4	3,6667	,76980	,38490	2,4417
Total	180	3,7148	,80047	,05966	3,5971
			95% Confidence Interval for Mean	Minimum	Maximum
			Upper Bound		
Vocational / Technical School (2-year)			4,0873	2,67	4,33
Bachelor's Degree			3,8055	1,33	5,00
Master's Degree			3,9798	2,00	5,00
Doctorate Degree			4,8916	3,00	4,33
Total			3,8325	1,33	5,00

Table 4.80: Test of homogeneity of variances for the effect of education level on organizational engagement

Test of Homogeneity of Variances			
Job Engagement			
Levene Statistic	df1	df2	Sig.
1,220	3	176	,304

Table 4.81: ANOVA test for the effect of education level on organizational engagement

ANOVA					
Organizational Engagement					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4,815	3	1,605	1,170	,323
Within Groups	241,346	176	1,371		
Total	246,161	179			

Table 4.82: Descriptive statistics for the effect of education level on organizational engagement

Descriptives					
Organizational Engagement					
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean
					Lower Bound
Vocational / Technical School (2-year)	10	3,1500	,79232	,25055	2,5832
Bachelor’s Degree	81	3,1481	1,17910	,13101	2,8874
Master’s Degree	85	3,3529	1,17975	,12796	3,0985
Doctorate Degree	4	2,3750	1,58771	,79386	-,1514
Total	180	3,2278	1,17269	,08741	3,0553
Descriptives					
Organizational Engagement					
	95% Confidence Interval for Mean		Minimum	Maximum	
	Upper Bound				
Vocational / Technical School (2-year)	3,7168		2,00	3,75	
Bachelor’s Degree	3,4089		1,00	5,00	
Master’s Degree	3,6074		1,00	5,00	
Doctorate Degree	4,9014		1,00	3,75	
Total	3,4003		1,00	5,00	

5. DISCUSSION AND CONCLUSION

In this study, it is aimed to examine self-management concept and assess the effect of self-management on employee engagement. At the beginning of the study, self-management and employee engagement literature has been reviewed and a research model has been constructed accordingly. Then factor analysis was conducted in order to redefine the theoretically predetermined dimensions that describe the concepts used in the research model. In addition, research model was revised according to the results of factor analyses. Finally, the revised research model was tested with linear regression analyses.

In order to redefine sub-dimension of independent and dependent variables with the help of data acquired by the survey questionnaire, factor and reliability analyses were conducted. Although, in the research model, self-managed work environment has four factors namely, skill variety, autonomy, feedback and trust (Laloux 2014; Kirkpatrick 2011), factor analysis for self-managed work environment has resulted with five factors, namely, autonomy and trust, skill variety, job dynamism, feedback from job, and feedback from supervisors. This result is meaningful. Autonomy and trust complement each other. In other words, when people trust each other, they do not need to control or interfere in one other's works, which supports autonomy in work environment. Thus it is normal to evaluate autonomy and trust together. Moreover, when the measure for feedback (Hackman and Oldham 1980) is reviewed, it will be observed that it includes items to measure feedback from job (3 items) and feedback from supervisors (3 items). Therefore, it is meaningful to have these factors separated from each other after factor analysis. Furthermore, the measure for skill variety (Hackman and Oldham 1980) contains some items related with regularity of the job. Thus, it is also meaningful to have this factor splitted into skill variety and job dynamism. According to the statistical results, these new factors are quite powerful in explaining the total variance and they are highly reliable.

The result is similar for self-management leadership behaviors. Although, in the research model, self-management leadership behaviors have six factors namely,

encouraging rehearsal, encouraging self-goal-setting, encouraging self-criticism, encouraging self-reinforcement, encouraging self-expectation and encouraging self-observation/evaluation, they have been divided into three factors after analysis. It has been observed that variables related with theoretical factors such as encouraging self-goal setting, encouraging self-reinforcement, encouraging self-expectation and encouraging self-observation/evaluation are gathered under the first factor which is entitled as encouraging self-performance management. This is consistent with the study of Laloux (2014, pp.123-126). Moreover, the second factor has been found to be totally consistent with the theoretical factor, encouraging rehearsal. The third factor, on the other hand, includes variables related with encouraging self-criticism and encouraging self-expectation. This result can be considered normal since self-expectation and self-criticism complement each other most of the time. People tend to have high expectations and they criticize self when their expectations are not realized. According to the statistical results, these new factors are quite powerful in explaining the total variance and they have high reliabilities.

The factors for employee engagement have been found to be consistent with the multidimensional approach. According to this approach, job engagement and organizational engagement are distinguished from each other (Saks 2006). The factors in this research are the same. These factors are very powerful in explaining the total variance. Although organizational engagement is highly reliable, job engagement has an acceptable reliability level.

Four hypotheses have been formed based on the research model in order to investigate the effect of self-management on employee engagement. These hypotheses were tested with regression analysis. All the hypotheses were approved with simple linear regression analyses. This means that self-management has an effect on employee engagement. In other words, both self-managed work environment and self-management leadership behaviors affect job engagement and organizational engagement. This result was expected. Although there is very limited research on the impact of self-management on employee engagement, there are some studies showing that self-management has several benefits for employees and organizations, including

productivity improvement, cost savings, performance improvement, employee participation and employee satisfaction (Cohen, Ledford & Spreitzer 1994; Manz and Sims 1980). Moreover, according to the research based on JD-R model (Schaufeli and Bakker 2010; Xanthopoulou et al. 2007), job resources including elements of self-managed work environment such as task variety, autonomy, and feedback from supervisors and colleagues have a positive impact on work engagement. Breevaart, Bakker and Demerouti (2013) also found that self-management with certain leadership behaviors has a positive effect on the resourcefulness of the work environment including authority to make decisions, skill variety, and feedback which in turn increases work engagement. According to them, self-management encourages employees to motivate themselves without a need for any direct supervision. Furthermore, feeling trust to meet the demands at workplace is also found as an important factor affecting engagement (Kahn 1990).

The hypotheses have been tested further with multiple regression analysis in order to examine the effects of the sub-dimensions of independent variables on the dependent variables. It is found that not all the sub-dimensions of independent variables affect significantly the dependent variables. According to the results of multiple regression analyses, autonomy and trust, skill variety, and feedback from supervisors affect organizational engagement positively, which is consistent with previous research (Breevaart, Bakker and Demerouti 2013; Schaufeli and Bakker 2010; Xanthopoulou et al. 2007; Kahn 1990; Hackman and Oldham 1976). As for the job engagement, positive effect of skill variety and feedback from job were observed. This result might be interpreted as only job related dimensions have an impact on job engagement while broader range of dimensions affects organizational engagement. Moreover, it is interesting to observe that feedback from job has a negative impact on organizational engagement. This is an unexpected result. This result might have occurred due to unmeasured variables such as personal resources. Some respondents might be engaged highly to their jobs with effect of feedback from job while they are disengaged to their organizations due to lack of personal resources. In addition, the same dimensions may have different impact on job and organizational engagement. According to multidimensional approach, job engagement and organizational engagement are related

to some extent but their antecedents and consequences are quite different (Saks 2006). Furthermore, it is meaningful to suggest removing job dynamism from the research model due to the fact that it does not have a significant effect on either job engagement or organizational engagement. Although this dimension is a part of measurement for skill variety theoretically (Hackman and Oldham 1980), it is found that it does not have any contribution to the research model. The main reason for that can be the culture in Turkey. Although most of the employees in Turkey favor to gain various skills, they do not support shifting from one task to another. Another reason might be the majority of the respondents' being from manufacturing industry. In manufacturing industry, employees support routine works and dynamism means an issue to solve for them.

According to the results of multiple regression analyses for the sub-dimensions of self-management leadership behaviors, encouraging self-performance management affects organizational engagement positively. It is important to state that this sub-dimension includes more than half of the theoretical dimensions. Moreover, this result is consistent with the study of Laloux (2014, pp.123-126). It is also interesting to observe that encouraging self-criticism/expectation has a negative impact on organizational engagement. This effect could be interpreted as normal. Manz and Sims (1987) also found lack of significant relation between encouraging self-criticism and other self-management leadership behaviors. They explain it with the drawbacks of self-criticism which are focusing on what not to do rather than what to do, being demoralizing and being difficult to apply consistently (Manz and Sims 1987). Furthermore, it is meaningful to suggest removing encouraging rehearsal from the research model due to the fact that it does not have a significant effect on either job engagement or organizational engagement. Although Manz and Sims (1987) included this variable in their research model, there is no other research to take it as an aspect of self-management. Moreover, rehearsal has not been found as an antecedent of employee engagement in any research.

To summarize the results of the regression analyses, the research model is successful to explain the effect of self-management on employee engagement. However, job dynamism and encouraging rehearsal can be removed from the research model since

they do not have a significant effect on either job engagement or organizational engagement. Moreover, the research model is more powerful to explain the effect of self-management on organizational engagement rather than job engagement. Thus, it might be used for further research to analyze only the impacts on organizational engagement.

Beside the research model, the impact of gender and education level on both job engagement and organizational engagement has been also analyzed. The effect of gender is analyzed with Independent-Samples T Test and the effect of education level is analyzed with One-Way ANOVA Test. It is interesting to find that gender and education level do not make any difference on respondents' level of job and organizational engagement. Age, industry, job level, position, and tenure based analysis can also be suggested for further research with a greater sample size.

Owing to the fact that self-management and employee engagement are recently developed concepts and there are limited academic research on them, this study might be one of the first to examine how self-management affects employee engagement. Although previous research has shown the benefits of self-management for employees and organizations, as well as the antecedents and consequences of employee engagement, we are unaware of any studies that examine how employee engagement is affected with self-management. Therefore, this study contributes to literature on both self-management and employee engagement by showing that self-management has a significant impact on employee engagement.

It would be interesting for future research to develop directional hypotheses and examine the research model in two different samples of participants, one from traditional organizations and other from self-managed organizations, and compare the results of them. Another possibility may be to analyze the effect of each sub-dimension by excluding them from the model one by one. Yet another possibility might be to use a mediator in the model between self-management and employee engagement. Finally, an empirical study with experimental and control groups could be conducted to expand the research model with new dimensions.

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APPENDICES

APPENDIX - 1

Thesis Questionnaire



BAHÇEŞEHİR ÜNİVERSİTESİ

Bu anket formu Yüksek Lisans Tez çalışmamla ilgilidir. Anketi oluşturan soruları cevaplamak çok kıymetli olduğunu bildiğimiz 10-15 dakikanızı alacaktır; ancak bu çalışma sonucu elde edilecek bulguların iş hayatına önemli katkılarının olacağını düşünmekteyim. Anketten elde edilen veriler sadece bilimsel amaçlar için kullanılacağından kimlik bilgilerinize gerek yoktur. Soruları cevaplarken her bir cümleye ne ölçüde katıldığınızı ya da katılmadığınızı belirtiniz. Soruların bazıları kendilerini tekrar eder gibi gözükseler de bu durum araştırmanın tekniği açısından gereklidir. Açık ve dürüst olunuz. Tüm soruları boş bırakmadan cevaplamanızı önemle rica eder, katkılarınızdan dolayı teşekkür ederim.

Bölüm 1:

Bu bölümde kendi çalıştığınız organizasyonu değerlendirmeniz istenmektedir. Lütfen aşağıdaki ifadeleri dikkatlice okuyup; firmanızdaki uygulamaları, çalışma ortamını, kendi yönetici(leri)nizi ve işinizi/görevlerinizi düşünerek bu ifadelere hangi oranda katıldığınızı belirtiniz.

Lütfen soruları sadece kendi çalıştığınız firmayı düşünerek cevaplayınız.

		Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
		1	2	3	4	5
1	Bu örgütün bir üyesi olmak çok cezbedicidir.					
2	Yöneticim bana nasıl yaptığım konusunda sürekli geribildirim sağlar.					
3	Geniş bir yelpazede farklı beceri ve yetenekleri kullanarak bir dizi farklı görevi yapma şansına sahibim.					
4	Yöneticim bizi bir faaliyete kalkışmadan önce üzerinden geçmeye teşvik eder.					
5	Ben gerçekten kendimi işime adarım.					
6	Yöneticim bizi kendi ekibimiz için hedefler tanımlamaya yönlendirir.					
7	Benim için en heyecan verici şeylerden biri bu örgütteki meselelerle ilgilenmektir.					
8	Eğer bir işteki performansımız ortalamanın altında ise, yöneticim bizi kendimize karşı eleştirel olmaya teşvik eder.					
9	Bu işte bir dizi karmaşık beceri kullanma fırsatına sahibim.					
10	Yöneticim bir işi iyi yaptıysak bizi birbirimizi övmeye teşvik eder.					

11	İşin nasıl ve ne zaman yapılması gerektiğine karar vermekte neredeyse tam bir sorumluluğa sahibim.					
12	Yöneticim grubumuzu işimizde çok iyi yapabileceğimizi düşünmeye teşvik eder.					
13	İşin kendisi bana ne kadar iyi yaptığım konusunda bilgi sağlar.					
14	Yöneticim bizi performans seviyemizin farkında olmaya teşvik eder.					
15	Bazen kendimi işime öyle kaptırırm ki zamanın nasıl geçtiğini anlamam.					
16	Amirlerim veya iş arkadaşlarım nadiren bana işi ne kadar iyi yaptığım konusunda geribildirim verirler.					
17	Bu örgütte insanlar arkanızdan işler çevirecektir.					
18	Yöneticim bizi yeni bir görevi ilk defa yapmadan önce pratik yapmaya (fiziksel ya da zihinsel) teşvik eder.					
19	Bu örgütte olup bitenler ile gerçekten ilgilenmiyorum.					
20	Yöneticim bizi grubumuz için kendi hedeflerimizi tanımlamaya sevkeder.					
21	İşim oldukça basit ve tekrarlayan bir iştir.					
22	Yöneticim bizden performansımız standardın altında olduğu zaman kendimize karşı sert olmamızı bekler.					
23	İşin nasıl yapılması gerektiğine karar vermekte çok az özgürlüğe sahibim.					
24	Eğer bir ödevi özellikle iyi yaparsak, o zaman yöneticim bizi kendimiz hakkında olumlu hissetmeye teşvik eder.					
25	Sadece işi yapmak bana ne kadar iyi yaptığımı anlama fırsatları sağlar.					
26	Yöneticim bizi grubumuzdan yüksek performans beklemeye teşvik eder.					
27	Bu iş benim neredeyse bütün ilgimi ve zamanımı alıyor; tamamen onunla ilgileniyorum.					
28	Yöneticim bizi performansımızın ne durumda olduğunu bilmeye teşvik eder.					
29	Burada insanlar bu şirkete güvenemeyeceğinizi hissetmektedir.					
30	Amirler ne kadar iyi yaptığımızı düşündüklerini bizim bilmemize izin verirler.					
31	Bu örgütün bir üyesi olmak beni canlı tutar.					
32	Yöneticim biz gerçekten yeni bir göreve başlamadan önce onun üzerinden geçmemize yardımcı olur.					
33	İşim bir dizi farklı görevi yapmayı içerir.					
34	Yöneticim bizi kendi görev hedeflerimizi saptamaya teşvik eder.					
35	İşim bana takdir kullanma veya karar vermeye katılma fırsatı vermez.					
36	Yöneticim performansımız ortalamanın altındaysa bizi özeleştirel olmaya sevkeder.					
37	İşim bana yeterince performans gösterip göstermediğim konusunda az ipucu sağlar.					
38	Yöneticim bizi iyi bir iş yapmak için birbirimizi övmeye teşvik eder.					
39	İşimi yaparken zihnim sık sık sapar ve başka şeyler düşünürüm.					
40	Yöneticim bizi kendimizden çok şey beklemeye teşvik eder.					
40	Yöneticim bizi kendimizden çok şey beklemeye teşvik eder.					
41	Bu şirketteki insanlara güvenebileceğimi hissediyorum.					
42	Yöneticim bizi ne kadar iyi performans gösterdiğimizi yargılamaya teşvik eder.					
43	Bu örgütün bir üyesi olmak benim için heyecan vericidir.					

44	Yöneticim bizi bir işe başlamadan önce onu nasıl yapacağımız konusunda düşünmeye teşvik eder.					
45	İşimin talepleri son derece rutin ve öngörülebilirdir.					
46	Yöneticim bizi grup performansımız için hedefler belirlemeye teşvik eder.					
47	Bu işe son derece bağlıyım.					
48	Yöneticim bizi zayıf performans gösterdiğimizde kendimize karşı eleştirel olmaya teşvik eder.					
49	İşim bana çalışmamı yapmakta önemli ölçüde özgürlük sunar.					
50	Yöneticim bir işi iyi yaparsak bizi kendimiz hakkında iyi hissetmeye teşvik eder.					
51	Bu örgüte son derece bağlıyım.					

Bölüm 2: Demografik Bilgiler

Yaş Aralığınız:						
☐ <25	☐ 25-34	☐ 35-44	☐ 45-54	☐ 55-64	☐ 65 ve daha fazla	
Cinsiyetiniz: ☐ Kadın ☐ Erkek						
Medeni Haliniz: ☐ Bekar ☐ Evli						
Eğitim Durumunuz:						
☐ İlköğretim	☐ Lise	☐ Önlisans	☐ Lisans			
☐ Yüksek Lisans	☐ Doktora	☐ Diğer:				
Kaç Yıldır Çalışma Hayatındasınız?						
☐ <5	☐ 5-10	☐ 10-20	☐ 20-30			
☐ >30						
Kurumunuzun Sahiplik Türü:						
☐ Özel ☐ Kamu						
Kurumunuzun Büyüklüğü (Türkiye Genelindeki Tam Zamanlı Çalışan Sayısı):						
☐ <100	☐ 100-499	☐ 500-999	☐ 1000-1499	☐ 1500-2499	☐ 2500-5000	☐ >5000
Kurumunuzun Ait Olduğu Sektör:						
☐ Bankacılık	☐ Bilgi ve İletişim	☐ Danışmanlık	☐ Eğitim			
☐ Enerji	☐ Finans ve Sigortacılık	☐ İnşaat	☐ Kamu Yönetimi			
☐ Madencilik	☐ Perakendecilik	☐ Sağlık	☐ Tarım,			
Ormancılık ve Hayvancılık						
☐ Taşımacılık ve Dağıtım	☐ Turizm ve Otelcilik	☐ Üretim	☐ Diğer:			
Kaç Yıldır Bu Firmada Çalışıyorsunuz?						
☐ <1	☐ 1-3	☐ 3-5	☐ 5-10	☐ 10-20		
☐ >20						

Çalıştığınız Departman:				
☐ Araştırma ve Geliştirme Kaynakları	☐ Bilişim Teknolojileri	☐ Finans / Muhasebe	☐ İnsan	
☐ Mühendislik	☐ Müşteri Hizmetleri	☐ Pazarlama	☐ Satış	
☐ Üretim	☐ Yönetim	☐ Diğer:		
Şu Anki Pozisyonunuz / İş Seviyeniz:				
☐ Maaşlı Personel (Giriş Seviye) (Uzman)	☐ Maaşlı Personel (Orta Seviye)	☐ Maaşlı Personel		
☐ Bağımsız Danışman	☐ Orta Düzey Yönetici	☐ Üst Düzey Yönetici		
☐ Patron / İş Ortağı	☐ Diğer:			
Kaç Yıldır Bu Pozisyonda Çalışıyorsunuz?				
☐ <0,5	☐ 0,5-1	☐ 1-3	☐ 3-5	☐ 5-10
☐ >10				

APPENDIX - 2

The Correlation Matrix

Correlations										
	Autonomy and Trust	Skill Variety	Job Dynamism	Feedback from Job	Feedback from Supervisors	Encouraging Self-Performance Management	Encouraging Rehearsal	Encouraging Self-Criticism/Expectation	Job Engagement	Organizational Engagement
Sig. (2-tailed)										
N	180	180	180	180	180	180	180	180	180	180
Pearson Correlation	,456**	1	,427**	,312**	,337**	,333**	,140	,176**	,559**	,519**
Sig. (2-tailed)										
N	180	180	180	180	180	180	180	180	180	180
Pearson Correlation	,287**	,427**	1	,268**	,105	,126	,029	,051	,342**	,276**
Sig. (2-tailed)										
N	180	180	180	180	180	180	180	180	180	180
Pearson Correlation	,465**	,312**	,288**	1	,351**	,316**	,280**	,287**	,364**	,276**
Sig. (2-tailed)										
N	180	180	180	180	180	180	180	180	180	180
Pearson Correlation	,456**	,337**	,105	,351**	1	,704**	,619**	,507**	,161**	,502**
Sig. (2-tailed)										
N	180	180	180	180	180	180	180	180	180	180
Pearson Correlation	,607**	,333**	,126	,316**	,704**	1	,665**	,681**	,184**	,656**
Sig. (2-tailed)										
N	180	180	180	180	180	180	180	180	180	180
Pearson Correlation	,323**	,140	,029	,280**	,619**	,665**	1	,660**	,060	,359**
Sig. (2-tailed)										
N	180	180	180	180	180	180	180	180	180	180
Pearson Correlation	,230**	,176**	,051	,287**	,507**	,681**	,660**	1	,191**	,308**
Sig. (2-tailed)										
N	180	180	180	180	180	180	180	180	180	180
Pearson Correlation	,279**	,559**	,342**	,364**	,161**	,184**	,060	,191**	1	,395**
Sig. (2-tailed)										
N	180	180	180	180	180	180	180	180	180	180
Pearson Correlation	,750**	,519**	,276**	,276**	,502**	,656**	,359**	,308**	,395**	1
Sig. (2-tailed)										
N	180	180	180	180	180	180	180	180	180	180

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

*. Correlation is significant at the 0.05 level (2-tailed).