THE ROLE OF ACADEMIC MOTIVATION, COURSE SATISFACTION, AND ADVISORY RELATIONSHIP ON RESEARCH SELF-EFFICACY BELIEFS OF GRADUATE STUDENTS

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I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

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ABSTRACT

THE ROLE OF ACADEMIC MOTIVATION, COURSE SATISFACTION, AND ADVISORY RELATIONSHIP ON RESEARCH SELF-EFFICACY BELIEFS OF GRADUATE STUDENTS

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The aim of the study was to investigate the role of academic status, phase of the study, career plan, autonomous motivation, controlled motivation, course satisfaction, and advisory relationship in graduate students' research self-efficacy. Data were collected from 403 master and doctoral students from Social or Educational Sciences Institutes utilizing the Motivation for PhD Studies (MPhD), Course Satisfaction, the Rapport subscale of Advisory Working Alliance – Student (AWAI-S), and Self-Efficacy Scales. Hierarchical regression analysis was conducted in which academic status, phase of the study, and career plan was in the first, autonomous and controlled motivations were in the second, course satisfaction and advisory relationship were in the last block of the model. The model was significant, explaining 34.2% of the variation. The most salient predictor was autonomous motivation, followed by advisory relationship, course satisfaction, and controlled motivation. While academic status and phase of the study were not significant predictors, career plan was significant. Graduate students with academic

career plans were found to be significantly more efficacious than those with non-academic career plans and who are undecided about their careers.

Keywords: Graduate Education, Research Self-Efficacy, Academic Motivation, Course Satisfaction, Advisory Relationship

ÖZ

LİSANSÜSTÜ ÖĞRENCİLERİN ARAŞTIRMA ÖZYETERLİKLERİNDE AKADEMİK MOTİVASYON, DERS MEMNUNİYETİ VE DANIŞMANLIK İLİŞKİSİNİN ROLÜ

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Bu çalışmanın amacı, lisansüstü öğrencilerin akademik statü, öğrenim aşaması, kariyer planı, otonom ve kontrollü motivasyon, ders memnuniyeti, danışmanlık ilişkisinin araştırma özyeterliklerinde rolünü araştırmaktır. Sosyal veya Eğitim Bilimleri Enstitülerine bağlı programlara devam eden 403 yüksek lisans ve doktora öğrencisine Doktora Motivasyonu (MPhD) Ölçeği, Ders Memnuniyeti Ölçeği, Danışmanlık Çalışma Birliği - Öğrenci (AWAI-S) Uyum Alt Ölçeği ve Özyeterlik Ölçeği uygulanmıştır. Hiyerarşik regresyon analizinde birinci blokta, akademik statü, çalışma aşaması ve kariyer planı; ikinci blokta, otonom ve kontrollü motivasyon; üçüncü blokta ise ders memnuniyeti ve danışman ilişkisi modele eklenmiştir. Model toplam varyansın %34.2sini açıklamıştır. Bulgular en güçlü yordayıcının otonom motivasyon olduğunu göstermiştir. Danışman ilişkisi, ders memnuniyeti ve kontrollü motivasyon da lisansüstü öğrencilerin araştırma özyeterliğini anlamlı düzeyde yordamıştır. Akademik durum ve çalışma aşaması değişkenleri anlamlı katkı sağlamazken, kariyer planı değişkeni anlamlı

bulunmuştur. Akademik kariyer planı olan lisansüstü öğrencilerin araştırma özyeterlikleri, akademik olmayan kariyer planı olmayan veya kariyer planları konusunda kararsız olan lisansüstü öğrencilere göre daha yüksek bulunmuştur.

Anahtar Kelimeler: Lisansüstü Eğitim, Araştırma Özyeterlik, Akademik Motivasyon, Ders Memnuniyeti, Akademik Danışmanlık İlişkisi

This thesis is dedicated to my little sister, my greatest teacher, and my most precious gift:

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I love you to the moon and back and will forever be honoured to observe your journey. Your love and presence is never taken for granted.

I aspire to reach your level of being unapologetically thyself.

I am proud of many things in life, but nothing surpasses the sisterhood we have built.

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A journey of a thousand steps begins with a single step.

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LIST OF ABBREVIATIONS

SDT: Self Determination Theory

CFA: Confirmatory Factor Analysis

EFA: Exploratory Factor Analysis

CFI: Comparative Fit Index

TLI: Tucker-Lewis Index

WLSMV: Robust Weighted Least Square

RMSEA: Root Mean Square Error of Approximation

MPhD Scale: Motivation for PhD Studies Scale

AWAI: Advisory Working Alliance Scale

AWAI-A: Advisory Working Alliance Scale - Advisor

AWAI-S: Advisory Working Alliance Scale - Student

CHAPTER 1

INTRODUCTION

A simple question regarding one's graduate experience often has led to a scene similar to the one in the movie Blade Runner. Suddenly, the addressee has traveled back in time and then, with a mixture of several emotions on their face, has said, "I have seen things you people would not believe." The imaginary mixture of rain, blood and tears, and the puzzle on their face in these scenes have inspired the research at hand. What was the joy and sorrow on the surface referring to? Did graduate students feel confident in their ability to be a researcher? How did their personal differences affect their self-efficacy in their degree? Moreover, what other variables predict research self-efficacy?

This study investigates the probable relationship between academic status, phase of the study, career plan, academic motivation, course satisfaction, advisory relationship, and research self-efficacy at the graduate level, and tries to illuminate graduate school experience in Turkey from students' point of view. As the introduction of the study, this first chapter gives a brief background of the topic, explains the purpose and research questions of the study, states the significance and limitations of the study, and presents the definition of the often-used terms.

1.1. Background of the Study

Graduate education leads to a master's or a doctorate (also called a doctoral degree). This formal education often requires a bachelor's degree and has additional requirements (e.g., a certain language level, minimum grade from an admission exam, minimum CGPA). Institutions are in charge of knowledge production and transmission via students' education and publications (Yazar, 2020). In that regard, graduate education carries the utmost importance in training future

researchers, academicians, scientists, and many other experts in their fields and aims to educate well-prepared professionals. It is interconnected with the functional use of national resources and the country's level of development (Bozan, 2012), and its benefits to society and ability to shape the future should be taken into consideration when planning graduate education.

Deciding to do a Ph.D. is considered a high-risk strategy revealed several quantitative and qualitative research studies (Golde, 2005; Lovitts, 2001). It is risky since one would start a Ph.D. despite the possibility of several years of hard work with no gain. Ph.D. graduates may not find what they've been looking for, such as an academic position or a better job. So what drives them to do a Ph.D. despite the risk? Graduate students' initial motivations to pursue a higher degree appeared to include: professional development, pursuing an academic career, conducting scientific research, continual or life-long learning, discontent with undergraduate education (Yazar, 2020), improving career prospects, personal development, and intrinsic interest in the discipline (Brailsford, 2010). It is revealed that they had multiple motives to start a Ph.D., and the influence of friends, existing colleagues, family members, and academics was also effective (Brailsford, 2010).

With the change of times, a bachelor's degree has almost lost its place of being a privilege. On the other hand, attaining a graduate degree gives the person a priority in terms of professional skills (Yazar, 2020). An increase in the number of registered graduate students in Turkey has been observed since 2009 (Günay, 2018). Despite the high risk, statistically, the increase in research doctorates is a worldwide fact (Parker-Jenkins, 2016). Due to its long history, undergraduate education has a pleasing theoretical framework. However, graduate education has been poorly investigated and understood (Golde, 2005). The growing number of doctoral degree interest draws attention to graduate education research. More and more effort is put into understanding whether the inherited structure functions effectively and satisfies the needs.

Academic institutions consider adult learners (e.g., graduate students) capable of self-directed, autonomous learning (Wellington, McCulloch, Sikes, Bathmaker, & Hunt, 2005). They assume them to grasp any learning they receive

through taught elements or advisory instruction through personal engagement with the literature and research process. A possible reason for problems occurring in graduate education may be this mismatch between the assumption of institutions and the reality for the students. As a result, the self-related terms of students gain even greater importance. These interconnecting self-related terms were categorised into seven: basic terms, non-self-terms, self-processes, self-views, self-biases, reactions to the self, and interpersonal (Morin, 2017). Self-efficacy as a person's self-belief on their ability to achieve a goal (Schunk & Pajares, 2009) belongs to the category of self-views. It mirrors past performances (Bandura & Schunk, 1981) and determines students' effort and perseverance (Schunk, 1981), which in turn might mirror their future performances. According to Bandura (1997), self-efficacy has four sources: mastery experiences, vicarious experiences, verbal persuasion, and physiological and affective states. The first one is the most effective since it shows the individual their capability first-hand, however observing another person and modelling them to build self-efficacy is also possible (Bandura, 1997). Self-efficacy, or the lack of it, can also be originated in verbal input from influential people and physical and emotional well-being (Bandura, 1997; Usher & Pajares, 2008). Individuals can either rely on one source or harmonise the sources as they like (Bandura, 1997). Though additional sources were offered (e.g., Maddux, 2005), these four are generally accepted in the literature.

The increasing interest in graduate education, and its differences with undergraduate education (Hodgson & Simoni, 1995), resulted in a separation of these two contexts. Since training researchers is one of the primary purposes of graduate education (Sinclair, Barnacle, & Cuthbert, 2014) and autonomy is expected from those researchers (Wellington et al., 2005), their self-efficacy did not only come into prominence but also created a subcategory. Research self-efficacy refers to graduate students' confidence in their capability of achieving research-related duties like choosing a design, writing (Morrison & Lent, 2014). The previous literature positively correlated it with academic motivation, research interest, and involvement (Lambie et al., 2014; Lambie & Vaccaro, 2011; Morrison & Lent, 2014; Pyhältö, Vekkaila, & Keskinen, 2012; Sverdlik, Hall, McAlpine &

Hubbard, 2018), and negatively with dropout (Litalien & Guay, 2015) and self-handicapping behaviours (Schwinger & Stienmeier-Pelster, 2011).

Compared to self-efficacy, research self-efficacy studies are somewhat limited. Research showed that research self-efficacy of graduate students could be supported with research methods coursework, research opportunities, mentoring, research culture (Niehaus, Garcia, & Reading, 2018). The most commonly used scales to measure research self-efficacy were the Self-Efficacy in Research Measure (SERM: Kahn & Scott, 1997; Phillips & Russell, 1994), the Research Self-Efficacy Scale (RSES: Bieschke, Bishop & Garcia, 1996), and the Research Attitudes Measure (RAM: O'Brien, Malone, Schmidt, & Lucas, 1998). Research self-efficacy, measured with SERM, was shown to be positively correlated with a satisfactory advisory relationship (Schlosser & Kahn, 2007), a satisfactory research training environment (Kahn & Schlosser, 2010), research interest (Szymanski, Ozegovic, Phillips, & Briggs-Phillips, 2007), and productivity (Kahn & Schlosser, 2010; Szymanski et al., 2007) in the last two decades. The results with RSES were similar and indicated a positive correlation with research interest and productivity (Lambie et al., 2014; Lambie & Vaccaro, 2011; Petko, Sivo & Lambie, 2020). Additionally, a positive correlation with research knowledge (Lambie et al., 2014) was also found. In Turkey, Odacı (2013) investigated research self-efficacy using RSES as well. In addition to productivity, a positive correlation between computer self-efficacy and well-being was discovered. Odacı (2013), in this study, also reported the effect of academic status on research self-efficacy. Like SERM, RAM also displayed a positive correlation with advisory relationships (Schlosser & Gelso, 2001). Some researchers developed their own scales to measure research self-efficacy and strengthen the finding of its positive correlation with productivity and research attitude (Rezaei & Zamani-Miandashti, 2013), and further demonstrated its positive correlation with motivation (Salehi, Kareshki, & Ahanchian, 2013), and autonomy and academic support (Overall, Deane, & Peterson, 2011), and negative correlation with anxiety (Rezaei & Zamani-Miandashti, 2013). Recently, Sverdlik and Hall (2019) developed a relatively short Self-Efficacy Scale to measure doctoral students' research self-efficacy. They found that students showed the

highest self-determined motivation and self-efficacy in the coursework phase, while the lowest at the qualification examination phase. For the present study, this Self-Efficacy Scale was adapted to Turkish to measure the research self-efficacy of graduate students. The following predictors were tested: academic motivation, course satisfaction, and the advisory relationship.

Academic motivation is the mental process that directs people to act in a certain way to accomplish their goals (Deci & Ryan, 2000). It is often accepted and explored as a dichotomy: intrinsic and extrinsic motivation. However, the Self-Determination Theory suggested a more complex and explanatory motivation theory. SDT first claimed that as an addition to the two types of motivation, there is also "amotivation," representing the lack of motivation (Deci & Ryan, 2012). Moreover, it argued that extrinsic motivation was classified into four categories – external, introjected, identified, and integrated regulations – decreasing their self-determination level, respectively (Deci & Ryan, 2012). A higher-order model was proposed to explain the motivation in more detail. These five regulations were categorised under autonomous motivation (i.e., intrinsic, integrated, and identified regulations) and controlled motivation (i.e., introjected and external regulations) (Litalien, Guay, & Morin, 2015). Academic motivation, in general, was discovered to be positively correlated with both self-efficacy (e.g., Lambie et al., 2014; Lambie & Vaccaro, 2011; Morrison & Lent, 2014; Pyhältö et al., 2012; Sverdlik et al., 2018) and with research self-efficacy (Salehi, Kareshki & Ahanchian, 2013). Considering the higher-order model, Litalien and Guay (2015) discovered a positive correlation between autonomous motivation and perceived competence, whereas a negative correlation between controlled motivation and perceived competence. The result of their study and long history of motivation and self-efficacy connection suggests a predictive relationship between them. To measure the academic motivation of graduate students in the current study, Litalien, Guay, and Morin's (2015) Motivation for PhD Studies Scale, which was developed based on the SDT, was chosen.

Course satisfaction defines the level of contentment of a student on their course-related aspects. Course satisfaction was not directly linked to research self-

efficacy in the literature. However, studies examining the relationship between students' perceived satisfaction and self-efficacy (Liaw, 2008) and between hybrid doctoral course satisfaction and self-efficacy (Egbert, 2013) imply a possible predictive relationship between them. There is no prominent scale to measure the course satisfaction of graduate students in the literature. The scale developed by Çapa Aydın, Toplu, Aksöz, and Gelmez Burakgazi (2011) to measure the course satisfaction of doctoral students was chosen due to its context suitability.

Advising is a positive, neutral, or negative relationship (Schlosser & Gelso, 2001, 2005) built between an undergraduate or graduate student and their advisor. The definition, characteristics, and expectations change based on the level. Whereas for an undergraduate student, an advisor is a guide for choosing courses, for a graduate student, an advisor is highly influential on thesis/dissertation and might even be the door for employment (Lovitts, 2001). A good advisory relationship is linked to many beneficial outcomes such as independence (Gardner, 2007), productivity, satisfaction, motivation, and self-efficacy (Gelso, Baumann, Chui, & Savela, 2013). One of its connections was repeatedly shown to be research self-efficacy (Kuo, Woo, & Bang, 2017; Morrison & Lent, 2014; Overall, Deane, & Peterson, 2011; Petko et al., 2020; Schlosser & Gelso, 2001; Schlosser & Kahn, 2007). The current study explored the possible predictive effect of the advisory relationship on research self-efficacy with the widely known and accepted Advisory Working Alliance Inventory – Student (AWAI-S) of Schlosser and Gelso (2001). All in all, a model that predicts the research self-efficacy of graduate students by academic motivation, course satisfaction, and the advisory relationship seemed plausible.

1.2. Purpose of the Study

The aim of this study was to investigate the graduate education experience of master's and doctoral degree students of Educational Sciences Institutes and Social Sciences Institutes at state universities in Turkey. More specifically, it was aimed to examine how well research self-efficacy of graduate students is predicted by academic motivation, course satisfaction, and advisory relationship.

Additionally, the possible effects of academic status, phase of the study, and career plan were investigated.

1.3. Research Question

The research question to be answered in this thesis was: How well do academic status, phase of the study, career plan, academic motivation, course satisfaction, and advisory relationship predict academic research self-efficacy of graduate students?

1.4. Significance of the Study

Due to the increasing enrolment in the last decades worldwide (Parker-Jenkins, 2016) and Turkey (CoHE, n.d.), graduate education has gained greater attention in the literature. Many studies have been conducted on graduate education concerning academic motivation (e.g., Litalien et al., 2015; Litalien, Lüdtke, Parker, & Trautwein, 2013), course satisfaction (e.g., Çapa Aydın et al., 2011; Egbert, 2013), advisory relationship (e.g., Gelso et al., 2013; Kahn & Schlosser, 2010; Solem, Hopwood, & Schlemper, 2011), and research self-efficacy (e.g., Lambie et al., 2014, Lambie & Vaccaro, 2011; Litalien & Guay, 2015; Salehi et al., 2013; Sverdlik & Hall, 2019). They have yet to be validated to explain graduate students' experiences in Turkey, as the number of graduate students has also increased every year (Günay, 2018). In a recent report by The Council of Higher Education, it was published that there were approximately 343,569 master and 106,148 doctoral students in Turkey in the 2020-2021 academic year Yükseköğretim Bilgi Yönetim Sistemi, n.d.). In addition, studies on the advisory relationship were primarily conducted in the field of counselling (e.g., Schlosser & Kant, 2007), limiting the generalizability of their results. The qualitative approach was also often preferred by researchers (Sverdlik et al., 2018). Though those studies provide a deep understanding of the issues, they fall short in determining the general population's opinion due to their nature of being qualitative studies (Fraenkel et al., 2018). By collecting data from hundreds of participants quantitatively, the current study allows generalising the in-depth information gathered from the former studies.

Graduate experience is a significant part of training academics. Not having enough information on the topic restricts institutions from creating well-prepared

programmes and policies (Goldman & Goodboy, 2017). That is the reason for this study to examine some variables that theoretically affect the graduate experience, reveal their relationships, and make suggestions to improve graduate education accordingly. Career development scholars and practitioners could benefit from increased research on advisory relationships, for instance (Schlosser et al., 2011). Results related to the advisory relationship from this study may provide worthy information to advisors and the faculty. Faculty may use the results to understand the true meaning of effective advisory relationships and students' reasons for choosing their advisors/mentors (Kuo et al., 2017).

High research productivity, timely progress, and program completion are major expectations from graduate students. Many academics believe that scholarly activity during doctoral studies predicts the future research productivity of doctoral students as professors (Barnard-Brak, Saxon, & Johnson, 2011). Undertaking in traditional scholarship activities (e.g., submitting research results to peer-reviewed outlets, making professional presentations) is considered the most crucial factor to acquire tenure-track positions and promotions in academic settings (Ramsey, Cavalarro, Kiselica, & Zila., 2002). Research showed that several variables, such as motivation (e.g., Fernet, Guay, & Senecal, 2004) and advisory relationship (e.g., Gelso et al., 2013), correlate with research productivity, and understanding these variables that affect productivity is an asset to increase it. Institutions by increasing the autonomous motivation of graduate students and improving their advisory relationship could alter the graduate experience and increase the productivity of their students.

Similarly, enhancing the research self-efficacy of graduate students is of great importance at this point. For graduate students, self-sufficiency is a mandatory skill to be developed since becoming autonomous researchers is one of the main reasons for their attendance (Sinclair et al., 2014; Wellington et al., 2005). Furthermore, developing a sense of self-efficacy is an asset due to its effect on effort and perseverance (Bandura, 1977; Schunk, 1981). In line with Bandura's (1997) theory on the sources of self-efficacy, providing students opportunities of mastery and vicarious experiences through coursework, persuasory information

through advisory relationships may boost students' sense of self-efficacy. Considering the relationship between self-efficacy and research productivity (Lambie et al., 2014; Lambie & Vaccaro, 2011), examining factors enhancing self-efficacy would also contribute to the literature on research productivity (Ramsey et al., 2013).

1.5. Definitions of Terms

Graduate Student: It is the student who is pursuing a master's or doctoral degree (Zhao, Golde, & McCormick, 2007).

Academic Advising: It is the action of "academic advisor providing their advisee information, guiding them through departmental policies and teaching formal and informal rules of the profession" (Mansson & Myers, 2012).

(Academic) Advisor: The term refers to the faculty member responsible for guiding the advisee through the graduate programme (Schlosser et al., 2003). These role models "possess the skills and knowledge desired by their advisees to become effective researchers and teachers" (Mansson & Myers, 2012) and introduce advisees with the faculty members, the field of study, and also help boost the interest, motivation, and dedication (Howell-Muth, 2018).

Advisory Relationship: The term refers to the relationship built between a graduate student and a faculty member responsible for leading the students throughout their degree, including their thesis/dissertation phase (Lunsford, 2012).

Research Self-Efficacy: It is the individual's "confidence in successfully performing tasks bound up with conducting research" (Forester et al., 2004).

Academic Motivation: The term refers to the "cognitive process that drives graduate students to engage in research" (Kuo et al., 2017).

Autonomous Motivation: The term refers to carrying out an activity for enthusiasm, personal goals, or importance according to the individual (Litalien et al., 2015).

Controlled Motivation: The term refers to conducting an activity for an award or escaping from a punishment (Litalien et al., 2015).

Course Satisfaction: The term refers to the degree of contentment in a course experience (Strachota, 2003).

CHAPTER 2

LITERATURE REVIEW

In this chapter, former research is done on the context of graduate experience, and specifically on academic motivation, advisory relationship, course satisfaction, and research self-efficacy are given. The related literature allowed the research questions for this study to be built and theoretically validated.

2.1. Self-Efficacy

Self-efficacy is the perceived competency of individuals in their learning and achievement (Schunk & Pajares, 2009). In this section, self-efficacy and its relation to other self-related terms, the sources of self-efficacy, research self-efficacy, and previous studies on research self-efficacy are given.

2.1.1. Self-Efficacy and Other Self-Related Constructs

The rise of self-related terms in scientific literature leads to emerging of many new terms and caused confusion. To arrange the elements of this chaos and result in well-defined and separated self-terms and related ones, Morin wrote a review in 2017. He classified the terms in seven categories: (1) basic terms about self-perception in general (e.g., self, self-perception, self-reflection, self-schema,), (2) non-self-terms that are strongly linked to key self-terms (e.g., metacognition, mindfulness), (3) self-processes where self is a managing agent (e.g., self-regulation, self-agency, self-discipline), (4) self-views (e.g., self-concept, self-esteem, self-efficacy), (5) self-biases that is in charge of protecting the self (e.g., self-enhancement, self-deception), (6) reactions to the self (e.g., self-compassion, self-blame), and (7) interpersonal (e.g., self-confident), and focused on the first four

categories in his article (Morin, 2017). These terms are related to each other, as would be expected.

The fourth category, which includes self-concept, self-esteem, and self-efficacy, includes the thoughts, beliefs, emotions, and assessments of the person and is constructed by self-processes (Morin, 2017). Self-concept is basically about who the person is or how the person sees herself. Despite its similarity to self-knowledge, since non-accurate imaging of the self is also possible for self-concept (Carlson, 2013) and self-knowledge refers to an accurate image, they are not identical. It is also different from self-efficacy. Self-concept is a cumulative perception assembled through experience, affected densely by people of importance (Shavelson & Bolus, 1982), and includes feelings of self-worth. Self-concept is a belief of more general competence, while self-efficacy is more task-specific and judgement of the capability (Schunk & Pajares, 2002). Self-esteem, on the other hand, is the emotional interpretation of the self. Due to its nature of reaction to oneself, it can also be categorised under the sixth category.

Self-efficacy is explained as a person's perceived competency to learn and achieve a desired goal or goals (Schunk & Pajares, 2009) and as a person's potential to establish and complete planned tasks (Bandura, 1986). It is a predecessor and result of performance outcomes (Schunk & Pajares, 2009). Bandura and Schunk (1981) claimed that self-efficacy deals with "judgements about how well one can organise and execute courses of action required to deal with prospective situations containing many ambiguous, unpredictable, and often stressful elements" (p. 587). Self-efficacy judgements are not simply reflectors of past performances (Bandura & Schunk, 1981). It is important to study self-efficacy because it can affect the activities that people choose to do, the amount of effort they put, and persevere (Bandura, 1977).

Social Cognitive Theory claims that success is based on individuals' behaviours, thoughts, beliefs, and environments (Bandura, 1986). Self-efficacy is a term within this theory that is affected by individuals' actions and conditions and influences their behaviours and environments (Schunk & Pajares, 2002). Bandura (1986) claimed that individuals' self-efficacy influences their task choice, effort,

persistence, and achievement. This claim was proved over and over in time by several researchers (e.g., Howell-Muth, 2018; Kuo et al., 2017; Lambie & Vacaro, 2011; Lambie et al., 2014; Litalien & Guay, 2015; Morrison & Lent, 2014; Pyhalto et al., 2012). It was seen that students who believe in their competence engage willingly, toil, persist, and succeed more than those who do not. A high self-efficacy does not assure success since, without necessary skills and knowledge, a belief of competence would not do it (Schunk & Pajares, 2002). However, since individuals have the tendency not to get involved in activities that they have low expectations of, studying self-efficacy is critical. Students gain their self-efficacy of vital importance through vicarious experiences, verbal persuasion, physiological and affective states, but mostly through mastery experiences (Bandura, 1997).

Self-efficacy is related to self-confidence, self-assurance, and self-belief, directly affected by self-regulation, influencing each other with self-reflection (Morin, 2017). For self-efficacy, self-attention is an asset since it is impossible to be confident or not without paying attention to the self. Self-efficacy and self-esteem both influence each other. Self-efficacy carves self-esteem by measuring confidence in a task and is positively correlated with it (Morin, 2017). In the literature, several other concepts (such as outcome expectations, effectance motivation, perceived control, and self-competence) remind self-efficacy but should not be used interchangeably. Whereas self-efficacy is the confidence of capability and is about the self even though it might have an outside source, outcome expectations are related to the expected consequences, which can be highly affected by an external influence (Schunk & Pajares, 2002). It also differs from others with the characteristic of being task-specific and lacking a comparative nature (Schunk & Pajares, 2002).

2.1.2. Sources of Self-Efficacy

To explain where self-efficacy comes from, Bandura (1997) named four sources of self-efficacy beliefs: enactive mastery experiences, vicarious experiences, verbal persuasion, and physiological and affective states. Among them, mastery experience is the most powerful one since it is proof that the individual is capable of mastering the task (Bandura, 1997). Simply, a direct experience of

mastery increases self-efficacy because after they evaluate their competence, they see that they are successful and believe in themselves in executing a similar task. Especially, having the positive mastery experience in the skill developing phase affects the self-efficacy belief immensely (Usher & Pajares, 2008). A reverse effect is observed if they face a failure, especially before building a solid self-efficacy (Bandura, 1997). The effort is also of importance. An easy success results with a non-resilient self-efficacy, but putting an effort, accomplishing challenging tasks, and having setbacks from time to time results in a resilient one (Bandura, 1997). However, if the effort is tremendous and a failure occurs, individuals' self-efficacy might be lowered (Usher & Pajares, 2008). Furthermore, a success with others' aid results in less self-efficacy than a self-sufficient success (Usher & Pajares, 2008).

Self-efficacy beliefs can be influenced through vicarious experiences as well. Observing the people around influences the self-efficacy beliefs of an individual (Bandura, 1997). Suspicion about the self or limited experience might make people uneasy (Usher & Pajares, 2008). When one is cannot decide on their success level at a task, social modelling takes its turn. As a matter of fact, at certain times, the value of success can only be understood by comparing it with others. If the individual's grade is higher than the others around, their self-efficacy will increase. On the contrary, if the grade level is lower than the others, it will result in a feeling of failure and a decreased self-efficacy. Witnessing a success that is achieved by someone similar to them further increases the observer's self-efficacy (Schunk, 1987). If the model shows the struggles and effort on the way to their success, it can influence the self-efficacy of the observer even more (Schunk, 1987). In contrast, if the model fails at an easy task, it might decrease the observer's self-efficacy (Usher & Pajares, 2008). The effect of the model may influence the individual more if they are at a transition from one level to another, such as from elementary to middle school (Eccles, Midgey & Adler, 1984). Interestingly, finding a model with a higher status, power or prestige is more likely, according to Bandura (1997). The model with a higher status might be a celebrity due to the effect of the media (Bandura, 1997). In the context of graduate education, this model with a higher status could be one's academic advisor. However, the model does not have

to be an outsider. Bandura (1997) accepts self-modelling (e.g., comparison of performance through time) as a vicarious experience as well.

The third source of self-efficacy is verbal persuasion, especially of the influential people around the individual. The support from trusted people such as parents, teachers, or peers might increase one's self-efficacy (Usher & Pajares, 2008). The individuals might even depend on these persuasions when they are not capable of persuading themselves yet. This openness to manipulation could result in a decrease in self-efficacy as well. Bandura (1997) suggested that it could be even easier to decrease it notably in the formative years since individuals more conscientiously receive the messages.

The last source is physiological and affective states. Whereas uplifting emotions may increase one's self-efficacy, vulnerability-loaded emotions such as stress, tension, or fatigue might decrease. Not a day goes by that our physiological and psychological states do not affect almost every aspect of our lives. Different environments and different emotions often result in different performances. Because of that, individuals tend to believe that the physiological and emotional circumstances clue them in of their competence and success (Usher & Pajares, 2008). In general terms, physical and emotional well-being is positively correlated with self-efficacy, whereas 'negative emotional states' are negatively correlated (Usher & Pajares, 2008). The optimum point of the spectrum of possible arousals is neither too high nor too low (Bandura, 1997). Negative arousals such as homework (Eccles et al., 1984) seemingly increase through grade levels, increasing anxiety against school-related activities. If a solid self-efficacy belief is built, the change in arousals would not significantly affect self-efficacy, however, if not, persons might read their anxiety as a sign of inability, which might end with the terrifying failure as expected (Usher & Pajares, 2008).

Although additional sources of self-efficacy were suggested in time, such as imaginal experiences (Maddux, 2005), Bandura's four sources of self-efficacy are most widely accepted. Based on the individual and the context, the four sources could be harmonised in different ways. The harmony could be additive which means an increased number of available sources increase self-efficacy (Bandura,

1997). One source could be more firm than the other, which refers to an additive combination, or the strength of one source could rely on the other, which refers to a configurative combination (Bandura, 1997). According to Bandura (1997), focusing on one source and denying the others is often the method used.

2.1.3. Research Self-Efficacy and Studies on Research Self-Efficacy

For the very reason of its significance on individual, societal, national, and global levels, and with the increasing number of participants, graduate education became a bigger topic of interest in academia. Several qualitative studies have been done to investigate the doctoral or graduate experience and to improve it. Based on their educational situations, undergraduate and graduate students are loaded heavily with distinct obligations, and concluding the results from one to the other is questionable (Austin, 2002). Some researchers suggest examining phases of doctoral experience separately since each phase has different challenges, demands, and responsibilities (Gardner, 2007). The deficiency of research in Ph.D. student development prevents institutions from developing programmes and policies that target solving the specific problems (Goldman & Goodboy, 2017). There are mainly two purposes of doctoral education: creating human capital and forming a researcher (Sinclair et al., 2014). On the other hand, a doctoral study is defined as raising researchers as apprentices of disciplinary research communities which creates researchers more likely to succeed and flourish within the competitive research economy (Sinclair et al., 2014). Due to the nature and aim of graduate studies, research skills and proficiency, and in connection with research self-efficacy, is vitally important.

Research self-efficacy, as context-specific self-efficacy, refers to confidence in ably performing research-related tasks such as determining a research design, computer tasks, and writing (Morrison & Lent, 2014). Due to its nature, it is often related to graduate students who are on their transition to be independent researchers. The previous research revealed a correlation between research self-efficacy and several other variables. Students who have higher research self-efficacy have more academic motivation, increased interest in doing research and have greater involvement with research activities since they feel comfortable

conducting it (Lambie & Vaccaro, 2011). Also, research self-efficacy negatively correlated with dropout intentions (Litalien & Guay, 2015) and self-handicapping behaviours (Schwinger & Stienmeier-Pelster, 2011). Due to its connection to self-handicapping behaviours (Schwinger & Steinmeier-Pelster, 2011), a lack of research self-efficacy may lead to over-commitment, perfectionism, procrastination, disorganisation, low effort (Kearns, Gardiner, & Marshall, 2008), changing thesis topic, avoiding communication with the advisor, and delaying submissions (Ahern & Manathunga, 2004).

Both in the context of Turkey and other countries, lots of research investigated the different forms of self-efficacy on children and adolescents (e.g., Bandura & Schunk, 1981; Doğan Laçin, 2015), on undergraduate students (e.g., Shen, Cho, Tsai & Marra, 2013; Titrek, Çetin, Kaymak & Kaşıkçı, 2018), on graduate students (e.g., Morrison & Lent, 2014) and professionals (e.g., Yüner, 2020). However, research on research self-efficacy, especially at the graduate level, is somewhat limited.

To measure the research self-efficacy of graduate students, researchers made some attempts to create a scale. Phillips and Russell (1994) developed SERM. This 33-item scale was later shortened by Kahn and Scott (1997). Bieschke, Bishop, and Garcia (1996) developed another scale - RSES - to examine different stages of research and which was suggested to be used for humanities or science students. The data from 177 graduate students with 51-items indicated a four dimension structure: research conceptualisation, research implementation, early tasks, and presenting the results. Later, the RAM with 23 items was developed by O'Brien et al. (1998). They collected data from 150 graduate students, analysed it with an oblique rotation. Forester, Kahn, and Hesson-McInnis' (2004) reviewed them and used confirmatory factor analyses (CFAs) on these three scales with 1004 psychology Ph.D. students via an online survey. Since the CFAs did not confirm the factor structures of the scales, an exploratory analysis was run, and a four dimension structure was discovered. Despite the limitations, these three instruments were widely used in the literature. In 2019, Sverdlik and Hall inspected the effect of the doctoral programme phase on the well-being levels and motivation (i.e., self-

determined motivation and self-efficacy) of 3004 Ph.D. students in a quantitative study. The study revealed a well-functioning scale to measure research self-efficacy and showed that research self-efficacy changed from phase to phase. Whereas the highest well-being and motivation (i.e., self-determined motivation and self-efficacy) was observed during the coursework phase of the study, the lowest was spotted in the comprehensive examination phase. The examination phase also was the phase with poor physical and psychological health and satisfaction.

Niehaus, Garcia, and Reading (2018) conducted a case study analysis with 17 students to shed light on the development of research self-efficacy. It was revealed that the research methods coursework and writing promoted students' research self-efficacy. Moreover, extracurricular research opportunities, faculty- and peer-mentoring, and research culture (i.e., hidden curriculum) significantly enhanced research self-efficacy.

In the literature, the predictive effect of research self-efficacy on research interest had been investigated and shown throughout the years (e.g., Lambie et al., 2014; Lambie & Vaccaro, 2011). Lambie and Vaccaro (2011) examined the level of research self-efficacy and interest with 89 counsellor education doctoral students. Results utilizing the RSES, Research Training Environment Scale-Revised (RTES-R), and Interest in Research Questionnaire (IRQ) showed that as grade level increased, so did research self-efficacy. Also, research self-efficacy was positively correlated with interest in research and productivity. Lambie et al. (2014) investigated the development of doctoral students and examined research self-efficacy, interest in research, and research knowledge in a correlational study. Sixty-seven Ph.D. students from a university in the southeastern U.S. were administered the RSES, the IRQ, and the Research Knowledge Assessment. Findings revealed the positive correlation and the predictive nature of research self-efficacy on interest in research and research knowledge. A positive correlation also appeared between research self-efficacy and productivity.

Petko, Sivo, and Lambie (2020) explored the relationship between research self-efficacy, interest in research, and research mentoring. They collected data from 261 counsellor education Ph.D. students by administering RSES, IRQ, the Research

Mentoring Experience Scale. A positive relationship between scholarly activity, research self-efficacy, and research mentoring was observed. Research self-efficacy also differed by year of study. There was no difference between the first and second-year students and between the third-year students and beyond. However, third-year students had significantly higher research self-efficacy scores than both first and second-year students. It was indicated that research interest positively predicts research self-efficacy. However, research mentoring was negatively correlated with research self-efficacy. Moreover, research self-efficacy was also linked to productivity. With a quantitative study, Szymanski et al. (2007) investigated the effect of research training environments on students' productivity. Data were collected from 223 graduate students through several scales (e.g., RTES-R-S, Internship Research Training Environment Scale, SERM, IRQ, and Scholarly Activity Scale (SAS). It was found that the research training environment (RTE), with its role on research self-efficacy and research interest, contributed to scholarly productivity.

Kahn and Schlosser (2010) investigated correlates of programme RTE via a quantitative study with 231 students and 81 faculty members from 40 Ph.D. programmes in clinical, counselling, and school psychology programmes. The following measures were used: RTES-R, SERM, IRQ, SAS, AWAI-S, Job Satisfaction Scale, and Faculty Work-Life Survey. Additionally, the PsycINFO database, programme websites, and recorded components of the curriculum or requirements were used to gather information. Hierarchical linear modelling analyses showed that RTE was positively related to research interest and advisory relationship. Advisors were claimed to be the primary vehicle of RTE to the students. No difference in the research self-efficacy between programmes with positive and negative RTEs was observed. However, within a programme, it was observed that students with higher RTES-R scores had higher SERM scores as well. Despite its correlation with research self-efficacy and research interest, productivity was not linked to RTE perceptions of students.

Rezaei and Zamani-Miandashti (2013) studied the possible correlation among research self-efficacy and characteristics, research anxiety, and attitude

toward research. The data were collected from 210 agriculture students from Iran via scales created by the authors. The results showed that students had a positive attitude toward research, research anxiety at a moderate level, research self-efficacy at a high level. Research self-efficacy scores of Ph.D. students were significantly higher than M.S. students. There was a positive correlation between age, published papers, attitude toward research, and research self-efficacy, and a negative correlation between research anxiety and research self-efficacy. In another correlational study conducted in Iran, Salehi, Kareshki, and Ahanchian (2013) collected data from 126 Ph.D. students. Pearson correlation indicated a significant relationship between the scales, and research self-efficacy was found to be a mediator in the research factors and research motivation relationship.

Research self-efficacy was correlated with advisory relationship in several studies (e.g., Gelso et al., 2013; Kahn & Schlosser, 2010; Litalien & Guay, 2015; Morrison & Lent, 2014; Schlosser & Gelso, 2001; Schlosser & Kahn, 2007). In their attempt to develop the AWAI and look into its relationship with other aspects, Schlosser and Gelso (2001) conducted two-step research. They first asked for 281 counselling doctoral students to fill in the new scale and the RAM, the Counsellor Rating Form-Short Version, and the Attitudes Toward Research Scale to approve the internal consistency through factor analysis. Moreover, they validated its correlation with participants' research self-efficacy, attitudes toward research, perceived expertness, attractiveness, and trustworthiness of the advisor. For the second part, they demonstrated the test-retest reliability with the participation of 41 students over a 2-week interval.

Schlosser and Kahn (2007) investigated the characteristics of the doctoral advisor-advisee relationship in counselling psychology. Data were collected from 47 advisor-advisee dyads actively collaborating in 32 American Psychological Association accredited programmes. The advisory working alliance was measured using the advisor and advisee versions of the AWAI (i.e., AWAI-A and AWAI-S). Also, the advisors completed the Cost and Benefits of Advising Scale , the Scientist-Practitioner Inventory–20, the five-item Smoothness , and Positivity subscales of the Session Evaluation Questionnaire , and Research Competence

Scale. The advisees, on the other hand, filled in the SERM and RTES-R-S. Results suggested a moderate level of agreement of both parties on the advisory working alliance, the smoothness of interactions, and research competence. Both science and practice interest showed no relation with the quality of advisory relationship. Students' perceptions of their advisory working alliance were positively correlated with their research self-efficacy. Advisory working alliances of advisors' were found to be compatible with smooth and positive advisory interactions.

Overall et al. (2011) collected data from 359 Ph.D. students from a university in New Zealand to quantitatively investigate the effect of advisor support on students' research self-efficacy. Results indicated that advisors' help and support advisors were positively correlated with students' advisory satisfaction. On the other hand, autonomy support predicted not only students' advisory satisfaction but also research self-efficacy. Autonomy and academic support were positively correlated with and lead to the highest research self-efficacy. Nevertheless, even if compensated with high personal support, low autonomy support causes a lower research self-efficacy. This study not only emphasizes the significance of advisory relationship and support on graduate students' research self-efficacy but also reminds them of the vital importance of raising independent researchers who dare greatly to be themselves.

A very limited number of studies on research self-efficacy at the graduate level were carried on in Turkey. In 2013, Odacı examined the predictive relationship between computer self-efficacy, self-esteem, subjective well-being, and research self-efficacy of graduate students. They collected data from 247 graduate students in a Turkish state university. Findings showed a positive relationship between research self-efficacy and computer self-efficacy and subjective well-being. Between research self-efficacy and self-esteem, a correlation was not found. Research self-efficacy of the females was higher than males, of Institute of Science students were higher than others, of Ph.D. students were significantly higher than M.S. students. Productivity and publication-related terms were also positively correlated with research self-efficacy. Even though it is not on research self-efficacy but scientific research competency, it is useful to mention Beisenbayeva's (2017)

study. She explored and compared the scientific research competencies of graduate students in the field of education in Kazakhstan and Turkey. The data for this descriptive and mixed-method study were collected using the Scientific Inquiry Competency Perception Scale, which was developed by the researcher. The results revealed that graduate students in Kazakhstan do not take courses other than Scientific Research Techniques to develop their scientific research skills. Though the students are quite competent in their ability to identify research problems, they are having difficulties with data collection tools, analysing data, and writing. The students in Turkey, on the other hand, have enough courses to develop their scientific research skills, are quite competent in their ability to write research problems, findings, and conclusions. However, they have issues with data collection tools.

2.2. Academic Motivation

Motivation is the cognitive process that leads an individual to behave in a specific way to attain the objectives that are longed for (Deci & Ryan, 2000). In this section, the theory of motivation, Self Determination Theory (SDT), and SDT studies in education are given.

The definition of motivation and motivation's current place was not always present in the literature. The story of the term began a long time ago. Freud's definition of the source of our behaviour as our instinct, or drive, inspired researchers to work on this primarily instinctual motivation, yet this definition failed to explain much of human action (Hegarty, 2011). Later, in the 1950s and 60s, the interest in motivation increased by Piaget's children's intelligence, White's competence motivation, and Herzberg's achievement motivation studies (Hegarty, 2011). This shift of focus from "responding to the environment" to "cognitive processes" stimulated observational studies of individuals' interaction with society (Hegarty, 2011). The motivation studies were expanded by examining the determinants of it: locus of control and personal causation (De Charms, 1968). The range of people being in control of what happens to them is named locus of control. Whereas internal locus leads to a belief of determining the conclusions by self, external locus leads to a belief of having limited control. On the other hand,

personal causation refers to an individual's initiating behaviour with the object of changing the environment in mind (De Charms, 1968). These two determinants of motivation promoted an individual who has the utter command of their motivation. Since these determinants resonated with them, adult learners were considered self-motivated (Hegarty, 2011).

Motivation has been studied with several methods. Most studies with doctoral students are qualitative, which studied small samples and, hence, limited generalizability (Litalien et al., 2015). Nevertheless, they give insight and emphasise its relevance with persistence and success (Cardona, 2013). Since individuals may have different reasons to achieve the same thing, we can conclude that motivation is a multidimensional concept (Deemer, Martens, & Buboltz, 2010). Some former studies revealed a multifaceted nature of motivation with classifications such as intrinsic and extrinsic (Cardona, 2013) or personal and professional (Hoskins & Goldberg, 2005). However, most of the quantitative studies lacked the multidimensionality of motivation, and the majority of them used self-reports. The contribution of these studies is essential; however, they lack a valid theoretical framework needed to gain deeper insight for understanding the complex, multifaceted motivation of pursuing a doctoral degree (Cardona, 2013; Litalien et al., 2015).

Motivation is widely accepted as a dichotomy. While performing a task for the task itself is called intrinsic motivation (Litalien et al., 2015), performing it because it results in external rewards (e.g., status) is extrinsic motivation. However, research showed that this separation is not clear. In the past, it was investigated whether the two types are add-ons and whether they are negatively correlated. Even though a meta-analysis confirmed the negative correlation and showed that extrinsic rewards decreased intrinsic motivation (Deci, Koestner & Ryan, 1999), this finding was limited since it was observed that rewards that are independent of "doing an activity" or "achieving a standard" -"not controlling" in other words- tend not to decrease the intrinsic motivation (Deci & Ryan, 2008). So, only tangible rewards were negatively correlated with intrinsic motivation. This means extrinsic and

intrinsic motivations are not add-ons, and total motivation is not the best way to forecast people's behaviour and experience (Deci & Ryan, 2008).

2.2.1. Self Determination Theory (SDT)

One theory that provides the due complexity of motivation in the education context is Ryan and Deci's SDT that suggests several sorts of motivation regulating human behaviour (Deci & Ryan, 2012). Similar to some aforementioned studies, SDT also divides motivation into two categories: intrinsic and extrinsic. While intrinsic motivation is linked to carrying out a task due to interest or joy, extrinsic motivation is linked to reasons other than that (Deci & Ryan, 2012). SDT also offered a self-determination continuum to explain the three motivational processes: intrinsic motivation, extrinsic motivation, and amotivation. Both intrinsic and extrinsic motivation were accepted to be self-determined, and Deci and Ryan (2008) marked that individual determines which one to choose – or how to be motivated. The lack of motivation, where there is no intention, and where the individual passively accepts the events and outcomes is called amotivation.

The distinction of intrinsic and extrinsic motivation was present in other theories as well. SDT, however, further elaborates the extrinsic motivation based on the level of self-determination and builds a more complex theory of motivation. Extrinsic motivation is separated into four types of regulation: external regulation, introjected regulation, identified regulation, and integrated regulation (Deci & Ryan, 2012). External regulation appears if a person behaves in a certain way to earn a prize or eschew a penalty. Introjected regulation happens when a person is directed by an internal urge to chase egotism and unforeseen self-regard or avoid disgrace. Identified regulation occurs when behaviours are more internalised, and when individuals regard them as vital themselves. Lastly, integrated regulation occurs when behaviours are coherent with the objectives and requirements that create the person. A great sense of autonomy is fundamental for both identified and integrated regulations; however, they stand extrinsic since the desire is independent of the activity itself. Deci and Ryan (2012) situate the five types of regulation on a continuum based on autonomy from high to low, as intrinsic, integrated, identified, introjected, and external regulation, respectively. As a result of being on a

continuum, the types of regulations are expected to show stronger positive correlations between neighbouring regulations than between the distal ones (Litalien et al., 2015).

SDT recognises two broader categories: autonomous and controlled. While autonomous motivation contains the intrinsic, integrated, and identified regulations, controlled motivation contains external and introjected regulations (Litalien et al., 2015). Previous research linked autonomous motivation to positive concepts such as academic performance, perseverance (Black & Deci, 2000), productivity (Fernet et al., 2004), and contentment (Litalien et al., 2013). Controlled motivation, on the other hand, was linked to negative concepts such as rote learning (Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004)

Most theories considered motivation to be a unitary concept that primarily is concerned with the amount (e.g., Bandura, 1997). SDT, on the other hand, categorised motivation as autonomous and controlled and defended the significance of category over amount (Deci & Ryan, 2000). SDT presumed people as curious since achievement is fulfilling in itself (Deci & Ryan, 2008). Cultural relativists declare that autonomy, which focuses on individualism, is a Western concept. It is not as important in the East where relatedness that focuses on collectivism and interdependence is a more important need (Deci & Ryan, 2008). According to SDT, on the other hand, though cultures affect people in critical ways, all humans have certain needs (Deci & Ryan, 2008), and satisfaction in autonomy needs is common across cultures (Chirkov, Ryan, Kim, & Kaplan, 2003).

2.2.2. Self-Determination Studies in Education

To understand the motivation in different fields, SDT was often consulted. However, the predominant field used was education. One of the trends in research on motivation in education was its change over the years. According to research (Henderlong-Corpus, McClintic-Gilbert, & Hayenga, 2009), the motivation level decreases with age; hence, the segment of adult education needs to be handled carefully.

Motivation could be crucial for doctoral students since their degree is less framed compared to other educational levels. It requests greater independence,

heavier workloads, more complex tasks, and a considerable amount of time (Litalien et al., 2015). Doctoral programmes' lack of structure was claimed to compel students to be self-motivated (O'Meara, Knudsen, & Jones, 2013) particularly when they work on their dissertation since they are more independent in that dissertation phase. Since being motivated is an asset to become an independent researcher (Gardner, 2009) it must be important for doctoral success, especially in the later stages.

Sverdlik et al. (2018), in their review, reported five results about the motivation of graduate studies: (i) the main reason of attrition from graduate school was specified as lack of motivation by many articles; (ii) students have to manage their motivation to complete their programmes since doctoral work is highly unstructured; (iii) a range of interpersonal and intrapersonal factors correlate with student motivation including fit with supervisor; (iv) students have a spectrum of reasons from intrinsic to extrinsic to pursue their degrees; and (v) those who pursue intrinsic reasons reveal better satisfaction and well-being during their studies. External guidance and motivators can help students succeed at coursework, stated by Sverdlik et al. (2018). Yet, they added that those students often face problems with their research know-how and emotion regulations once they are independent. All in all, doctoral students who are self-motivated revealed greater satisfaction, well-being, and academic success (Sverdlik et al., 2018). Its strong interconnectedness to many other variables makes academic motivation almost an essential part of research on graduate studies.

The vast majority of the motivation studies of graduate students were conducted via quantitative studies. However, it was also possible to spot qualitative studies in the literature. Takashiro (2017) investigated the extrinsic motivation of Asian international graduate students via semi-structured interviews with ten students. The common themes that emerged from those interviews were the influence of the faculty, personal recognition, and convenience for a career. It was concluded that the main extrinsic motivation to pursue their degree was to find a vacancy in academia.

Despite the popularity of motivation in research, SDT-based motivation was not often studied for graduate students except from a few examples (Litalien et al., 2015). In 2006, Ahmed and Bruinsma adapted the Academic Motivation Scale (AMS) to investigate the motivational performance, which is rooted in self-concept and SDT, and its differences through different cultures. The data were collected from 181 graduate students. In the overall sample, self-esteem and academic self-concept were positively correlated. Also, academic self-concept was positively correlated with academic performance and autonomous motivation. Moreover, autonomous motivation was positively correlated with academic achievement. However, in the Asian sub-sample, autonomous motivation and academic achievement were not significantly correlated, which proposes the non-generalizability of the scale or the correlation across cultures. Litalien et al. (2015) criticize the adaptation of the scale since changing the words from "high-school" to "graduate" studies did not compensate graduate students' needs and reality, and the scale was not validated. The scale did not only miss the essence of the graduate education, but also lacked the integrated regulation since it requires the development of identity, which occurs later in life which is vital for graduate students (Litalien et al., 2015).

Similarly, Deemer et al. (2010) attempted to develop a scale that measures the motivation of graduates based on SDT. Participants were 437 graduate students from the U.S. and Canada. They developed the Research Motivation Scale (RMS) with three dimensions: failure avoidance, intrinsic reward, and extrinsic reward. They administered RMS along with other measures. They found that failure avoidance was positively correlated with failure, decisional procrastination and behavioural inhibition sensitivity, negatively correlated with the Behavioural Activation System (BAS) -drive, and not significantly related to BAS-reward. The intrinsic reward was positively correlated with intrinsic academic motivation, and behavioural activation sensitivity, negatively with external regulation and amotivation, and not significantly connected to introjection and identification regulations. Moreover, the extrinsic reward was positively correlated with motivation and behavioural activation sensitivity, and negatively correlated with

amotivation. Lastly, motivation and its relation to other variables were not consistent through all departments.

AMS was used by many other researchers as well. To understand their motivation for pursuing the degree, Hegarty, Brasco, and Lu (2012) adapted AMS for graduate students and collected data from 113 graduate students from two fields: business and liberal arts. The results of their analysis uncovered that the graduate students had external motivations to pursue their degrees. Also, the liberal art students were both intrinsically and extrinsically more motivated than business students.

To examine the motivation, need satisfaction, and perceived success of graduate students in synchronous hybrid learning environments (i.e., differences between online versus on-campus attendance) Butz, Stupnisky, Peterson, and Majerus (2014) carried out a quantitative study. The answers of 112 graduate business students to the Work Motivation Form-Employee, AMS-College, and Perceptions of Academic Success Scale and the item questioning their delivery mode perceptions were analysed through t-tests and regressions. Differences in need satisfaction, motivation, and perceived success were found between the two groups. It was discovered that online students were more prone to report when they feel isolated. Additionally, need satisfaction and motivation was correlated, and motivation was predictive of perceived success for both groups. Butz and Stupnisky (2016) also worked on this topic with a mixed-method study. They first interviewed 118 graduate students. Their answers to the interview allowed the researchers to develop a scale of four items to measure students' self-efficacy. The new scale and the Work-related Basic Need Satisfaction Scale, AMS-College, and the Perceptions of Academic Success Scale were administered to 100 graduate students. It was seen that peer relevance, technology, teacher, and the arrangement of the programme affected synchronous hybrid learning. Perceived success was positively correlated with intrinsic motivation, and negatively correlated with amotivation. The results revealed that whereas online students had higher intrinsic motivation, on-campus ones had higher identified and extrinsic motivation. Also, on-campus students had greater relatedness. The emerging self-efficacy showed its psychometric quality.

Amida, Algarni, and Stupnisky recently (2020) examined academic achievement through motivation, time management, and career goal. Findings of structural equation modelling supported SDT's role in understanding academic success. Among the three categories, only intrinsic motivation significantly predicted academic success. While time management was linked to academic success, career aspiration did not affect it. The relatedness score of Ph.D. students was higher than M.S. students. Lastly, males' career aspiration was higher and their time management was lower than those of females.

These studies contributed to the literature; however, they did not use the five-factor model but only focused on intrinsic and extrinsic motivation and amotivation. Litalien et al. (2015) collected data from 1304 Ph.D. students from a university in Canada to develop a scale that specifically measures Ph.D. students' motivation based on the five-factor structure of SDT. It was revealed that intrinsic, integrated, and identified regulations were positively correlated with satisfaction with studies, university, and programme, performance, positive affect, and postdoctoral intentions (i.e., positive outcomes), while negatively correlated with dropout intention, negative affect, test anxiety, and thesis problems (i.e., negative outcomes). Introjected regulation was positively correlated with every negative outcome and negatively correlated with general satisfaction with studies, satisfaction with the university, positive affect, and performance. External regulation was positively correlated with test anxiety and negatively correlated with satisfaction with studies in the first sample, whereas it was positively correlated with thesis problems and negatively correlated with performance in the second sample. External regulation showed no significant relation with positive and negative affect, satisfaction with the university and the programme, dropout intention, or postdoctoral intention.

Litalien and Guay (2015) restudied SDT and its connection to persistence in the study, perceived competence, and autonomous and controlled regulations by two approaches. They reported that perceived competence was indeed a vital element of doctoral studies and is mainly predicted by autonomous and controlled regulations, which are the two categories of academic motivation. Sverdlik and Hall

(2019) also used the Motivation for PhD Studies Scale (Litalien et al., 2015) for their study on the effect of phase on well-being and motivation (i.e., self-determined motivation and research self-efficacy) of graduate students. Their study indicated that the well-being and motivation of students were at their highest level in the coursework phase and lowest in the comprehensive examination phase.

SDT was investigated in Turkey in the context of children and adolescents (e.g., Akyürek, 2019), undergraduate students (e.g., Serhatoğlu, 2018), teaching (e.g., Bağcı, 2018), of psychology (e.g., Gümüşten, 2020), of work (e.g., Aydoğdu, 2019;) and sports (e.g., Kazak Çetinkalp, 2009). However, an SDT study with graduate students was not present in the Turkish literature.

2.3. Graduate Student Experience

The graduate student is a term used for those who pursue a master's or a doctoral degree (Zhao et al., 2007). In this section, course satisfaction and advisory relationship were examined as a part of the graduate experience.

2.3.1. Definition of Course Satisfaction and Studies on Course Satisfaction

Student satisfaction, in general, reflects the perception of a learner on their educational experience and their contentment with it. It is considered a key indicator of education quality (Domenech-Betoret, Abellan-Rosello & Gomez-Artiga, 2017); hence, it must be studied to alter graduate education. Research roots back to the late 1960s and early 1970s on student satisfaction and the 1980s on college student satisfaction (Bean & Bradley, 1986). Moreover, students' satisfaction with their academic studies has come into prominence due to its relation with students' persistence in their studies (Wach et al., 2016). Studying satisfaction is important because it may encourage the evolution of university environments, increasing academic performance, and prohibiting attrition. It is crucial for degree completion (Suhre, Jansen, & Harskamp, 2007) since it stimulates students to continue their programme. It is also linked to utility, institutional fit, academic integration (Bean & Bradley, 1986), academic achievement (Bean & Bradley, 1986; Suhre et al., 2007), vocational interest (Wach et al., 2016), social life (Bean & Bradley, 1986), tolerance to stress (Wach et al., 2016), motivation (Wach et al.,

2016; Suhre et al., 2007), and self-efficacy (e.g., Liaw, 2008). Despite its importance and long history, students' satisfaction does not have comprehensive theoretical support and a commonly accepted definition (Wach et al., 2016).

As a more specific type of it, course satisfaction refers to students' contentment of the aspects of the course or courses that they have attended. Moreover, along with the advisory relationship, course satisfaction was found to be related to academic satisfaction (e.g., Çapa Aydın et al., 2011), interest in research and teaching, and career choice (e.g., Meyers et al., 2000). Another significance of it is rooted in its ability to assess the effectiveness of a course (Bolliger & Halupa, 2012).

On their way to explore the academic satisfaction of doctoral students through a correlational study, Çapa Aydın et al. (2011) administered the Academic Life Scale to 350 Ph.D. students. The scale included academic satisfaction subscale along with the following subdimensions of satisfaction: knowledge, courses, qualification exam, advisory and faculty relationship, academic tendency, administration, financial status, and services. Hierarchical multiple regression analysis revealed that the students of Graduate School of Natural and Applied Science were not as academically satisfied as those of Graduate School of Social Science. It was also discovered that advisory relationships, knowledge, qualification examination, and coursework were significantly correlated with academic satisfaction.

The vast majority of the previous studies on course satisfaction were focused on online or hybrid education. Hong (2002) investigated the satisfaction and achievement of Malaysian students in an online course. The 26 participants were administered questionnaires and interviews. Findings showed that gender, age, learning style, time spent on the course, peer interaction, course activities, and online conferences were not linked to satisfaction and achievement. Student-instructor interaction affected both the achievement and satisfaction of students. Though the students taking the course with a higher CGPA were more successful in their online courses, it did not affect their satisfaction. On the contrary, even though computer experience was not linked to achievement, it showed a positive

relationship with course satisfaction. Additionally, it was stated that students expect the instructors to design and manage the course.

Bolliger and Halupa (2012) explored the anxiety and satisfaction, including course satisfaction, of online doctoral students. 84 students that are taking their first course in the programme filled in a satisfaction questionnaire with subscales on the teacher, technology, system, communication, results, and satisfaction, and anxiety scale with subscales on computer, internet, and online learning that were developed by the researchers. It was revealed that doctoral students were satisfied with their online course, and the subscale on instructor satisfaction had the highest score. Also, it was seen that students were experiencing anxiety about their online course, and those who have a computer, internet, or online course-related anxieties had anxiety in other domains as well. T-tests showed a negative correlation between anxiety and student satisfaction.

The connection between course satisfaction and self-efficacy was explored previously for undergraduates (e.g., Artino, 2009). To see whether the connection is possible for graduate students, Egbert (2013) investigated course satisfaction and self-efficacy in a hybrid system via her quantitative study. Data were collected from 139 doctoral students using the Doctoral Student Survey and analysed using descriptive, bivariate, and multivariate statistical analyses. A significant difference between the online and on-campus versions was discovered. The task value, faculty support, and peer support scores were significantly higher for on-campus education. Course satisfaction and self-efficacy were positively correlated with task value, faculty support, and peer support and were negatively correlated with boredom and frustration. It was found that task value, boredom and frustration in the online setting, and boredom and frustration in the on-campus setting were predictors of course satisfaction. Only task value was a predictor of self-efficacy. Last, course satisfaction and self-efficacy were found to be positively related and were predictors of each other.

In the Turkish context, Baturay (2010) explored the course satisfaction of undergraduate students taking an online language class. Canbolat (2017) investigated the effect of threaded discussion in the blog environment on university

students' course satisfaction with undergraduate students. Also, Bayrak, Tibi, and Altun (2020) developed a course satisfaction scale for undergraduate students. A study on course satisfaction was not present at the graduate level, yet studies on graduate courses drew attention. Yasan (2011) investigated research assistants' opinions on the effect of graduate courses on their science perception and research skills. An interview was conducted with 12 Ph.D. students who are also research assistants at a state university in Turkey. Content analysis of the data showed that participants agreed on the significance of the research methods course on research skills, which hints at a connection between course satisfaction and research self-efficacy, and of history and philosophy of science course on science perception. These studies do not satisfy the need to fill the gap in the Turkish literature. Further research, especially on the graduate level, is needed.

2.3.2. Advisory Relationship

The advisory relationship is established between a graduate student and a faculty member who is responsible for guiding the student throughout the degree (Lunsford, 2012). In this section, advisory relationship and its similarities and differences with mentoring relationship, academic advisory relationship, and its place in the literature are given.

2.3.2.1. Advising versus Mentoring

Advising and mentoring often outline the relationship between a graduate student and the faculty member who contributes to student development during the programme (Schlosser & Gelso, 2001). Mentoring is a word that is occasionally used synonymously and interchangeably with advising. Despite the similarities between their definitions, the two words are not necessarily synonymous.

Advising can be a positive, neutral, or negative relationship based on the valance states (Schlosser & Gelso, 2005) and may include dissatisfying relationships (Schlosser et al., 2011). On the other hand, mentoring is inherently a positive relationship since it refers to protégé's learning from a senior (Green & Bauer, 1995). A mentor is described as an individual who educates and aides a less skilled and experienced person (Levinson, Darrow, Levinson, & McKee, 1978). Even though some research mentioned dysfunctional mentoring (e.g., Eby &

McManus, 2004), “bad” mentoring is oxymoronic (Schlosser et al., 2011). Both being an advisor without being a mentor and being a mentor without being an advisor is possible (Schlosser & Gelso, 2001).

The label of “mentor” is given by the protégé as an honour to the mentor, and it is often ex post facto (Weil, 2001). Earlier literature suggests that potential mentors are attracted to students with high potential for a successful career (Green & Bauer, 1995). When asked, mentors point to the most productive student with a similar career as the most successful (Blackburn, Chapman, & Cameron, 1981). This not only helps mentors legitimate themselves on their career path but also aids them to form a like-minded network (Blackburn et al., 1981). Mentors offer students several career and relational opportunities and emphasises a reciprocal relationship with them in the meantime (Johnson, 2002). It is not limited to an academic setting like advising. While an advisor is a part of students’ programme or department (Schlosser et al., 2011), and students report having one nearly consistently (Schlosser & Gelso, 2001), a mentor could be in any place (Schlosser et al., 2011), and percentage of having one is 50 to 66 (Clark, Harden, & Johnson, 2000). Even in the Turkish context, mentor and advisor concepts are perceived differently, and mentoring is preferred over advising (Güven, 2014).

2.3.2.2. Academic Advisory Relationship

An advisor is the key contact person with the faculty and provides technical guidance (Weil, 2001). The duties of an advisor differ for undergraduate level and graduate level. Whereas undergraduate academic advising mainly includes assisting students to choose the optimal courses and approving once they are chosen, graduate advising goes deeper than that. Academic advisors on the graduate level affect how students comprehend the field, perceive academic professionals, and interact as teachers and researchers. They can also assist students in getting a job (Lovitts, 2001). They influence the choice of a thesis/dissertation topic and the condition of the final product (Lovitts, 2001). Advisory relationships allow disciplines and graduate programmes’ sustainment since they transmit both information and culture from one era to the next (Austin, 2002).

Advising undoubtedly influences the doctoral experience (Ives & Rowley, 2005). Whereas graduate coursework is well-structured, research and dissertation phases of the graduate experience are ill-defined and can cause anxiety and disorientation, Gordon (2003) stated. Even though doctoral students are considered independent researchers in training, they may not become experts right away in this unstructured situation due to the complexity of self-regulation. Gordon (2003) describes the responsibility of advisors as guiding students, assuring the timely completion of the dissertation, and reducing attrition. Moreover, the "transition of doctoral candidates to independence" is considered to be an interdependent relationship between the advisor and the candidate (Sinclair et al., 2014). Learning is communal (Baker & Lattuca, 2010), so a relationship can either assist or hinder it, including advisory relationship. The advisory relationship has been suggested as the main factor partake the success of the Ph.D. experience (Ives & Rowley, 2005). Thus, it is important to improve the overall quality of advisory relationships for the benefit of students, faculty, and the general public. Perhaps because of that, the advisory relationship is the most researched factor in doctoral education, and it is accepted as the most influential (Sverdlik et al., 2018).

When the previous literature considered, four paradigms of advising style draws the attention: laisser-faire where graduate students do not need much support, the pastoral where they may need personal support, the directorial where they need research support, and contractual where they may need support with the management of both (Taylor & Beasley, 2005). According to Schlosser et al. (2003), students with satisfying advisory relationships narrate their experience as mentorship. The satisfied ones reported feeling honoured, supported, encouraged, and effectively guided with the demands of graduate school by an advisor who is a positive role model. Dissatisfied students, on the other hand, considered their relationship harmful, and reported feeling neglected, and reported less self-efficacy and guidance regarding the programme.

It was said that advisors could "make or break a Ph.D. student" (Lee, 2008, p.267). Though the advisory relationship seems dyadic and straightforward at the surface, it is complex structure. However, is the advisor the only party that can

affect the relationship? Even though an advisor primarily aims to help the student become an independent researcher, there are evidence-based strategies to improve the advisory relationship, which students control. For instance, Goldman and Goodboy (2017) stated students' psychological maturity to preserve a respectful, friendly, and constructive advisory relationship. To alter the advisory relationship, its terms should be stated in verbal and written form, revisited with the passing time, and revised if necessary due to the changing character of the advisory relationship (Parker-Jenkins, 2016). The chemistry between the two parties is vital since a damaged relationship could harm both the persons and the institution.

Lately, a particular part of the advising relationship named "advisory working alliance" has gained popularity among researchers (Schlosser & Gelso, 2001; Schlosser & Kahn, 2007). Bordin's (1979) working alliance is the source of the advisory working alliance that we talk about today. The working alliance was based on therapeutic relationships, focused on the common goals, joint work, and emotional bonds, and was generalised to all psychotherapy theories and other professional relationships such as teacher-student (Bordin, 1979). Following this model, a supervision version was created (Bordin, 1983). Advisory working alliance focuses on concerted actions between the advisor and advisee to agree on aims and conduct joint tasks to attain those aims (Schlosser & Gelso, 2001). Even though there are other elements, this model mainly concerns the thesis and dissertation (Schlosser & Gelso, 2001).

2.3.2.3. Studies on Advisory Relationship

Research in the field mainly (i) describes instruments used to assess advising, (ii) assesses the way the advising relationship influences other variables, and (iii) further explores the sense of the advising relationship. In a review of 163 empirical articles (Sverdlik et al., 2018), seven results emerged about advising: (i) it is the most widely researched and most influential factor in the doctoral experience; (ii) an honest, auxiliary, and periodic advisory conversation was crucial for achievement and satisfaction; (iii) parallel work values such as communication style and frequency were the most vital factor; (iv) the agreement of all supervisees further affects the advisory relationship; (v) the advisory fit influences feelings and

perseverance; (vi) even though mentorship is stated as the ideal, fulfilling basic guiding and supporting roles when needed can preserve a high level of satisfaction, positive feelings, and advancement; and (vii) the role of an advisee is to regard the agenda, to get ready for gatherings, and to be open to feedback.

To understand the connection between advisory relationship and other variables, several studies were conducted. Past research studies have shown that a constructive advisory relationship was connected to favourable outcomes such as positive attitudes toward research, higher self-efficacy (Gelso et al., 2013; Kahn & Schlosser, 2010), satisfaction with the Ph.D. experience (Pyhältö, Stubb & Lonka, 2009; Zhao et al., 2007), advanced sense of belongingness (Solem et al., 2011), well-being (Pyhältö et al., 2009). Moreover, it would also influence success-oriented outcomes like academic achievement (Solem et al., 2011; Zhao et al., 2007), academic persistence (Pyhältö et al., 2009), productivity (Gelso et al., 2013). The quality of the advisory relationship has both short and long-term outcomes, which may influence the entire academic career (Lunsford, 2012).

One of the variables that the advisory relationship was linked to was research self-efficacy. Morrison and Lent (2014) investigated the advisory working alliance with a quantitative study. They aimed to build a relational efficacy (i.e., research self-efficacy, research other-efficacy, and relation-inferred research self-efficacy) model of the advisory working alliance. It was revealed that advisory working alliance was connected to students' research self-efficacy through relation-inferred self-efficacy. Moreover, the predictive effect of research self-efficacy on research interest and productiveness was discovered.

In another study, advisory relationship moderated the relationship between motivation and productivity. Kuo et al. (2017) investigated the connection between research self-efficacy, motivation, and productivity moderated by the advisory relationship. Data were collected from 109 doctoral students administering AWAI-S, SERM, and RMS. The hierarchical regression analysis revealed that research self-efficacy predicted research productivity. Different types of motivation had a different connection to research productivity. Whereas intrinsic motivation predicted productivity, failure avoidance was negatively correlated with it, and

extrinsic motivation had no predictive effect. Also, the advisory relationship, as expected, moderated intrinsic and failure research motivation and research productivity. However, it did not moderate research self-efficacy and research productivity.

Advisory relationship was also connected to satisfaction. Pyhältö, Vekkaila, and Keskinen (2012) conducted a mixed-method study, by analysing students' and their advisors' understandings of resources and difficulties involved in the doctoral process. They explored the fit between doctoral students and their working environment. Using Likert-type and open-ended questions, the researchers gathered data from 1184 Ph.D. students and 431 advisors from a university in Finland. Results showed that the fit between the two parties' understandings was connected to the Ph.D. students' satisfaction with their studies and the advisory relationship. Moreover, the fit amongst students and their working environment was connected to their doctoral experience.

Rice et al. (2016) showed the link between advisory relationship and generic satisfaction, and also its connection to academic stress. They examined the experiences of 387 international and 434 national graduate students from two universities in the U.S. Quantitative data on the advisory relationship were collected via AWAI-S. Results showed that (i) general alliance, academic stress, and wish to switch advisors do not differ for international and national students; (ii) general alliance was correlated with academic stress and desire to switch advisors; (iii) it was more probable for international students to be stressful when their advisors disregarded them; (iv) for both international and national students, mentoring was connected to lower stress and less desire to switch advisors; and (v) though advisory alliance's current level of measurement is good at identifying generic satisfaction, it is not as strong at understanding alliance elements. Furthermore, Goldman and Goodboy (2017) collected data via self-report surveys from 304 full-time, face-to-face doctoral students to investigate the effect of psychosocial development on advisory communication. Findings of path analyses indicated that psychosocial development was positively correlated with relational maintenance, which mediated its connection with advisory communication satisfaction.

In addition to its relation to other variables, the roles of advisors and mentors were also investigated. Carpenter, Makhadmeh, and Thorton (2015) conducted a two-part study (i.e., Study 1, Study 2). To identify the span of functions that surround mentor behaviours, they carried out a survey study. They asked open-ended questions investigating mentoring activities and their effects on 21 faculty members from doctoral programmes. The given answers were coded granularly and revealed that mentors provide their mentees knowledge, advice, stimulation, and support. Once the relationship is established, more research opportunities became available to the students. Unlike the previous literature, students specified a new function of a mentor as "intellectual," which includes critiquing student work, recommending materials, and encouraging them to meet their higher potential. Study 2 was conducted to identify the doctoral student-mentor function construct. The authors used Doctoral Student Mentor Functions, modified Mentoring Efficacy Scale, and demographic scale for this web survey. They collected data from 551 faculty members at doctoral programmes. Findings showed that mentors, (i) considered themselves authorised to look for and continue mentoring relationships with students, (ii) observed that students prefer taking career support from scholars practising quantitative methods, (iii) stated that productive, confident, and assistant professors to be most probable to guide on conducting research, (iv) expressed that gender did not significantly relate a function, (v) told that higher-ranked offered non-significantly more career and intellectual aid, (vi) announced academic rank to be negatively connected to the research and psychosocial functions, (vii) connected recent research productivity positively with mentor support, and (viii) declared doctoral students to obtain the most research and the least career support from quantitative scholars.

According to Kim (2009), East Asian culture is immensely impacted by Confucian philosophy. This impact may give the advisory relationship special cultural meaning, Wei et al. (2012) claimed. This might be the case with Turkey as well. Roles of advisors are a subject that has also been researched in Turkey. The majority of the literature in the advisory relationship focused on the roles of advisors using Kuzgun's scale and worked with undergraduate students (e.g.,

Bektaş Köser, 2010). The advisory relationship was not widely researched for the graduate level. As an exception, Sever and Ersoy (2017) explored the advisory relationship in doctoral education with a phenomenology study. Eight doctoral students who are research assistants in educational studies participated in semi-structured interviews, and their answers were analysed with interpretive phenomenological analysis. The participants stated that they consider doctoral studies a means to self and target realisation and expect doctoral education to be structured in a student-centred and more practical way. They see their advisors as guiding, supportive and instructive for them. They addressed the personal and professional characteristics their advisors should have and how these qualities affect them. They argued that the advisory relationship should be in balance and should not go beyond the professional dimension and that the intervention of their advisor should not go beyond the guidance and orientation role. In 2013, to explain the pairing process and the selection criteria of an advisor, academic productivity, and to explore the effect of advising satisfaction and graduate school on perceived support among graduate students, Aydın et al. conducted a correlational study with 148 Faculty of Education students where 31 were M.S., 94 were Ph.D. and 23 were integrated Ph.D. students and who were assigned to their advisors. The data were collected via the Taylor and Neimeyer's questionnaire and the Thesis Advising Scale of Tenenbaum. The results showed that highly satisfied graduate students reported receiving higher socioemotional and instrumental support compared to graduate students who are moderately satisfied with their advisors. In addition, moderately satisfied students perceive higher socioemotional support than slightly satisfied ones. Also, those who are highly satisfied with their advisors perceive higher networking support than slightly satisfied ones.

Also, for the graduate level, mentoring was investigated in Turkey. Seçkin, Aypay, and Apaydın (2014) quantitatively investigated graduate students' opinions about academic mentoring via the Ideal Mentoring Scale. The data were collected from 184 graduate students from four state universities in Turkey. Analyses revealed six dimensions: advising, honesty, relationship, relaxed personality, student recognition, and time allocation. Students' views on academic mentoring

did not change by the majority of their demographic information. The sub-dimension “mentor having a relaxed personality” was considered more significant by females. Education level changed students’ views of recognition and time devotion. Compared to M.S. students, Ph.D. students valued more whether their mentor recognises them and devotes time for them. Lastly, the student answers to the “honesty” subscale significantly differed by the title of their mentors (e.g., professor, associate professor, and assistant professor).

2.4. Summary of Literature Review

Graduate education has been increasingly studied due to its significance in producing knowledge and training the future workforce. Many aspects of it were examined to understand it better and to make necessary changes to alter it. Examining the literature on graduate education revealed a repetition of certain variables and the hinted pattern between them. Research self-efficacy, SDT based academic motivation, course satisfaction, and advisory relationship have been investigated on different grade levels in higher education. Some were studied in the specific area of graduate education, such as counselling. The investigation of the last decade alone showed the research self-efficacy and motivation relationship (Salehi et al., 2013), advisory relationship (Kuo et al., 2017; Overall et al., 2011; Petko et al., 2020), interest (e.g., Lambie & Vaccaro, 2011; Lambie et al., 2014; Petko et al., 2020), research anxiety and attitude (e.g., Rezaei & Zamani-Miandashti, 2013), productivity (e.g., Odacı, 2013; Rezaei & Zamani- Miandashti, 2013), self-esteem (Odacı, 2013), and more.

The results of these studies showed that graduate students who have high motivation to conduct research also have a high belief in them conducting the research (Salehi et al., 2013). The positive correlation between autonomous motivation and perceived competence and the negative correlation between controlled motivation and perceived competence (Litalien & Guay, 2015) imply a positive correlation between research self-efficacy and autonomous motivation and a negative correlation between research self-efficacy and controlled motivation. Research self-efficacy was not the same for M.S. and Ph.D. students (Odacı, 2013, Rezaei & Zamani-Miandashti, 2013). Also, social support is utterly crucial in

graduate education, and academic support is a part of it, influencing students' research self-efficacy (Niehaus et al., 2018). The advisory relationship as the pilar of graduate education and socialisation unsurprisingly affects research self-efficacy as well. Graduate students who have a good relationship with their advisors tend to have a high research self-efficacy (Morrison & Lent, 2014).

All in all, research self-efficacy, academic motivation, course satisfaction, and advisory relationship are four commonly studied variables in the literature. Despite their significance in graduate education and their hinted interrelatedness, they were not emphasised enough in the context of graduate education. Besides, all four of them were not examined as a model in the earlier studies. Additionally, a major gap in the Turkish context exists. Therefore, this study aimed to investigate the predictive effect of academic motivation, course satisfaction, and advisory relationship of graduate students on their research self-efficacy.

CHAPTER 3

METHOD

In this chapter, information about the overall design of the study, research questions, sampling, instrumentation, data collection instruments, and data analysis are given.

3.1. Overall Design of the Study

Graduate experience related studies often used a qualitative research design to understand students' views deeply and experiences because qualitative research values individuals' views of the situation and aim to understand the situations from the participants' points of view (Fraenkel et al., 2018). On the other hand, the present study follows a *quantitative research* design to be able to generalise those findings. Quantitative research accepts a single reality, aids in relating variables with each other, and occasionally describes the causes of those relationships (Fraenkel et al., 2018). The correlational research method was used in this study to understand the relations between the variables (i.e., academic status, phase of the study, career plan, academic motivation, course satisfaction, advisory relationship, and research self-efficacy). The correlational research method investigates the relationships among two or more variables and makes intelligent predictions (Fraenkel et al., 2018).

To explore the relationship, data were collected from graduate students of three state universities through four scales for four variables: demographic information form, Motivation for Ph.D. Studies Scale (Litalien et al., 2015), Course Satisfaction Scale (Çapa Aydın et al., 2011), Rapport Subscale of AWAI-S (Schlosser & Gelso, 2001), and Self-Efficacy Scale (Sverdlik & Hall, 2019). MPhD, AWAI-S-Rapport, and Self-Efficacy Scale were translated and adapted into Turkish

within the scope of this study. To conduct the statistical analyses, IBM SPSS 24 and Mplus 8.0 were used.

3.2. Research Question

The research question to be investigated in this study is:

How well do academic status, phase of the study, career plan, academic motivation, course satisfaction, and advisory relationship predict academic research self-efficacy of graduate students?

3.3. Participants

Graduate students (both at master's and doctoral level) who study in the Institute of Social Science and the Institute of Educational Science in state universities in Turkey were the target population of this research. In the 2019-2020 academic year, there were 76 Institutes of Social Sciences and 31 Institutes of Educational Sciences in state universities of Turkey actively (Yükseköğretim Bilgi Yönetim Sistemi, n.d.). The target population consisted of 139485 students (66725 females, 72760 males; 103774 MS students, 35711 Ph.D. students) (Yükseköğretim Bilgi Yönetim Sistemi, n.d.) in the aforementioned academic year. It is not feasible to include all the students in the target population. Thus, the accessible population was identified as 11758 graduate students who study in the Institute of Social Science and/or the Institute of Educational Sciences at three state universities (namely Ankara University, Boğaziçi University, and Middle East Technical University) in Turkey. The number of graduate students is 8448, 1012, and 2301 in Ankara University, Boğaziçi University, and Middle East Technical University (METU), respectively.

Convenience sampling was used to select the participants. The survey link, including an invitation to participate in the study, was sent to all graduate students of selected institutes. The universities chosen for this study are long-standing ones with many students and have an Institute of Social Sciences and/or an Institute of Educational Sciences. Since one of the predictor variables was the advisory relationship, students were selected only from thesis Master programmes. Graduate students must have completed at least one semester in the program and have been

appointed to their thesis advisors. No further criteria for inclusion were present. Considering the population size, design of the study, and the number of items, the minimum sample size required was calculated as 384.

Data were collected from 561 volunteer graduate students. Seventy-seven of them were omitted as they did not fulfill the requirement of being included. In addition, 45 participants were omitted because they did not respond to any of the scales. As a result, among the 561 data, only 403 were eligible to be used in the analysis. Demographic characteristics of the participants are given in Table 3.1. Of those 403 participants, female students constituted 69.3% of the participants, while male students did 29.2%, others did 9%, and 2% did not state their gender. 67.6% of the participants were single, and 31.5% were married. Whereas 46.8% of the students were registered in Ankara University, 14.4% were registered in Boğaziçi University, and 38.6% were registered in METU. While 50.7% of the participants were master's degree students, 48.8% were doctorate students, and 2% of them did not state their academic status. 34.7% of the participants were on their course phase, and 64.6% were on their thesis/dissertation phase. 75% of them were working, and among them, 41.8% were research assistants, where the other 33.7% were working in other fields. Furthermore, 66.8% of the participants were planning to have an academic career, 15.3% were planning to have a non-academic career, and 15.3% were undecided about their future careers.

Moreover, the ages of the participants ranged between 22 and 67 (M = 29.96, SD = 5.71). GPA's of the participants ranged between 0.00 and 4.00, with a mean of 3.42 (SD = 1.09). On average, the participants were on their 5.45^{th} semester (SD = 3.78).

Table 3.1.

Frequency Distribution of Participants by Gender, Marital Status, University, Grade Level, Phase of Education, Work Status, Work Field, and Career Plan (n = 404)

	Frequency (*f*)	Percent (%)
Gender		
Female	280	69.3%
Male	118	29.2%
Others	4	9%
Not-stated	1	2%
Marital Status		
Single	273	67.6%
Married	127	31.5%
University		
Ankara University	189	46.8%
Boğaziçi University	58	14.4%
Middle East Technical	156	38.6%
University		
Academic Status		
MS	205	50.7%
Ph.D.	197	48.8%
Not-stated	1	2%
Phase of Study		
Course	140	34.7%
Thesis/Dissertation	261	64.6%
Work Status		
Working	303	75.0%
Not Working	99	24.5%

Table 3.1. (cont'd)

	Frequency *(f)*	Percent (%)
Work Field		
Research Assistant	169	41.8%
Other	136	33.7%
Career Plan		
Academic	270	66.8%
Non-academic	62	15.3%
Undecided	67	15.3%

3.4. Data Collection Instrumentation

Data were collected through demographic information form and four instruments: Motivation for Ph.D. Scale, Course Satisfaction Scale, AWAI-S-Rapport, and Self-Efficacy Scale**.** The implemented instrument in total consisted of two sections. Demographic information was questioned in the first section. In this section, the participants were asked about their gender, date of birth, marital status, grade level, university and department, semester, CGPA, amnesty status, work status, and career plan. The second section included four subsections. The first subsection investigated academic motivation and included 15 items of the MPhD Scale. The second subsection, which investigated course satisfaction, included six items of the Course Satisfaction Scale. The third subsection explored the advisory relationship by asking the participants about their advisory status, whether they changed their advisor, how many times they changed their advisor, the reason for the change, and the gender of their advisor. Additionally, the rapport subsection of AWAI-S, which has 11 items, was present. Furthermore, the last subsection looked into academic self-efficacy via 11 items of the Self-Efficacy Scale**.**

3.4.1. Motivation for Ph.D. Studies (MPhD) Scale

In the past years, many scales have been developed to assess the different types of regulations suggested by SDT, yet not many assessed it in doctoral students, states Litalien et al. (2015). An attempt was made to investigate

motivation in graduate students using a slightly adapted version of the AMS (Vallerand et al., 1992). AMS was originally developed for high school and college students and lacked the doctoral components. However, it was not empirically validated. Since AMS was initially developed for a younger population, integrated regulation, which requires an advanced stage of psychological development to form an identity (Ratelle, Guay, Vallerand, Larose, & Senécal, 2007), was not included in it. Thus, to measure research motivation in graduate students, Deemer et al. (2010) attempted to develop a scale inspired by SDT. However, the Scale used the intrinsic versus extrinsic dichotomy and lacked the multi-faceted nature of SDT.

Aware of the shortcoming of such a scale, in 2015, Litalien et al. developed and validated an SDT based scale – the Motivation for PhD Studies Scale – to assess motivation for Ph.D. studies. They aimed to develop a scale that can successfully evaluate the different types of regulations. The MPhD Scale has a total of 15 items utilising a Likert scale from 1 (Does not correspond at all) through 5 (Corresponds exactly). It consists of five subscales: Intrinsic (3 items), Integrated (3 items), Identified (3 items), Introjected (3 items), and External Regulation (3 items). These factors were proposed to be embedded in two higher-order factors: Autonomous and Controlled. There were no negatively worded items on the scale. Litalien et al. (2005) tested measurement invariance for the MPhD Scale across two samples and subgroups (i.e., gender, citizenship status, programme type, age, and progression). These tests showed the generalizability of both a five-factor and higher-order structures to Ph.D. students from various backgrounds. They also reported Cronbach's alphas for each dimension. They ranged from .61 to .81 in the first sample, while from .60 to .71 in the second sample. In addition, Litalien and Guay (2015) reported that the second-order structure also showed good fit to the data. Cronbach's alphas were .79 for autonomous regulation, and .68 for controlled regulation for the first study, and .81 and .71 for the second study. A sample item for each dimension is presented in Table 3.2.

Table 3.2.

Sample items of the Motivation for PhD Studies Scale

Higher-order dimensions	Dimensions	Sample item
Autonomous	Intrinsic regulation	For the pleasure of doing research
	Integrated regulation	Because doctoral studies are consistent with my values (e.g., curiosity, ambition, success)
	Identified regulation	Because it's important for me to advance knowledge in my field of study
Controlled	Introjected regulation	Because I do not want to be perceived as a quitter
	External regulation	To get a better paying job after graduation

3.4.1.1. Adaptation Process of the Motivation for Ph.D. Studies (MPhD) Scale

The Motivation for Ph.D. Studies Scale was adapted to the Turkish language after getting permission from the developers (Appendix B). First, three English Language Teaching (ELT) graduates independently translated the scale from English to Turkish. Then, translations were reviewed by the researchers, discrepancies among the translations were discussed with an external expert, and a reconciled draft in Turkish was developed. This draft was back-translated by three different ELT graduates who do not know the original English scale. Once the original and back-translation was compared by the researcher, necessary revisions were made and the final scale in Turkish was prepared (Appendix C). Lastly, it was examined by a graduate student for clarity and was finalised.

3.4.1.2. Pilot Study of the Motivation for PhD Studies (MPhD) Scale

A pilot study was performed with 336 graduate students (51.8% female, 19.1% male). Among the participants, 191 of them (56.8%) were master students, 45 of them (13.5%) were Ph.D. students. Complete response was obtained from 209 students for the Motivation for PhD Studies Scale. An EFA was conducted to

determine the factor structure of the 15-item Motivation for PhD Studies Scale. Since Mardia's test of multivariate normality was violated (b2p (7.28) = 277.75, $p < .05$), four factors were extracted through Principal Axis Factoring. The Direct Oblimin Rotation was applied. The sampling adequacy was examined through Kaiser-Meyer-Olkin's measure, and the assumption was satisfied with the value of .78. Also, Bartlett's test satisfied the sphericity ($\chi^2(105) = 1026.498$, $p < .05$) of the scale. Scores above .32 (Tabachnick & Fidell, 2019) was detected in the correlation matrix, which indicated a factor structure as well. The results displayed four factors (Table 3.3.) with the eigenvalue greater-than-one rule and explained 60.41% of the variance. The result was supported by the Scree test as well (Figure 3.1).

Table 3.3.

Eigenvalues, Percentages of Variance, and Cumulative Percentages for Factors of the Motivation for PhD Studies Scale (Eig>1)

Factor	Eigenvalue	% of Variance	Cumulative %
Factor 1	4.41	29.40	29.40
Factor 2	2.10	13.99	43.39
Factor 3	1.44	9.62	53.01
Factor 4	1.11	7.40	60.41

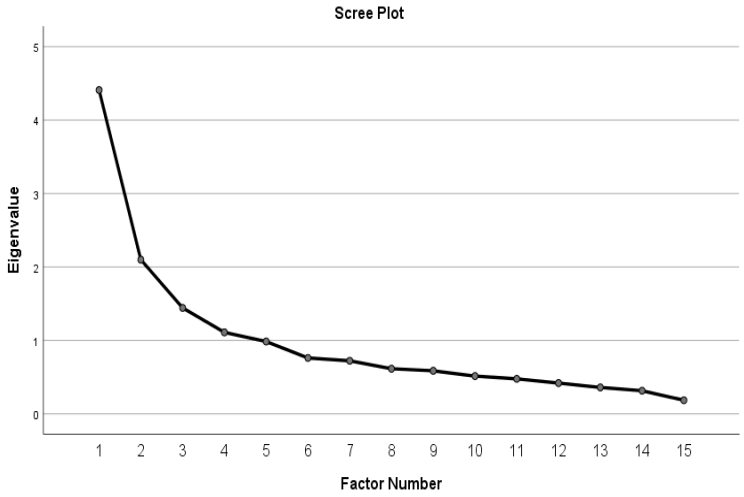

Figure 3.1. Scree test for the Motivation for PhD Studies Scale

However, as the emerging factorial structure differed from the proposed factorial structure and did not make sense, exploratory factor analysis was rerun by limiting the number of factors to two. In Table 3.4, the pattern matrix is given, which shows the factor loadings for each item. The items loaded in the two factors – autonomous and controlled motivation- as expected. The definitions of the two factors did not change.

Table 3.4.
Factor Loadings for the Motivation for PhD Studies Scale

Items	1	2
1	**.63**	.05
2	.07	**.36**
3	**.52**	-.02
4	-.08	**.25**
5	**.60**	.10
6	.05	**.45**
7	**.59**	-.07

Table 3.4. (cont'd)

Items	1	2
8	.05	**.64**
9	**.43**	.32
10	.08	**.77**
11	**.54**	.24
12	**.63**	-.05
13	.01	**.75**
14	**.65**	-.19
15	**.46**	.17

Cronbach's alpha coefficients were .81 and .73 for autonomous motivation and controlled motivation, respectively. "Alpha if item deleted" and "item-total correlation" are presented in Table 3.5. As the deletion of Item 4 made only a minor change in the Cronbach's alpha for the controlled motivation factor (from .73 to .75) and the item-total correlation of all other items showed a great contribution of the item to its respective scale (ranging from .36 to .58), all items were decided to be kept in the scale. The wordings of two items of the scale were changed. The in-parentheses explanation of Item 4 - e.g., with funding agencies, employers, collaborators, a research director, etc- was rephrased since the meaning was unclear in the context of Turkey. Instead, suitable commitments were given as examples - OYP, Tubitak scholarship. Also, the in-parentheses explanation of Item 7 was changed from "e.g., curiosity, ambition, success, etc" to "e.g. curiosity about learning, success" to increase its clarity.

Table 3.5.

Cronbach Alpha Coefficients, Item-total Correlations, and Alpha if Item Deleted Values for the Motivation for PhD Studies Scale (Eig=2)

	Cronbach alpha	Alpha if item deleted	Item-total correlation
Autonomous	.81		
Item 1		.77	.57
Item 3		.80	.48
Item 5		.79	.57
Item 7		.80	.51
Item 9		.80	.51
Item 11		.79	.57
Item 12		.80	.50
Item 14		.80	.48
Item 15		.80	.49
Controlled	.73		
Item 2		.72	.36
Item 4		.75	.23
Item 6		.70	.43
Item 8		.65	.58
Item 10		.65	.58
Item 13		.65	.58

3.4.1.3. Validity and Reliability of Motivation for PhD Studies (MPhD) Scale for the Main Study

CFA was performed to investigate the factor structures of the Turkish version of Motivation for PhD Studies (MPhD) Scale through Mplus 8 (Muthen & Muthen, 2012). Three different factor structures -two-factor structure, five-factor structure, and second-order structure- were tested. These three different factor structures were also tested by Litalien et al. (2015). First, CFA was run to

investigate the two-factor structure where autonomous and controlled motivation were the subscales. The two-factor structure also appeared in the pilot study. Second, CFA was rerun to test the five-factor structure, including the following dimensions: intrinsic, integrated, identified, introjected, and external. The third CFA was run to examine the second-order factorial structure of MPhD with higher-order factors (autonomous and controlled motivation) and lower-order factors (intrinsic, integrated, identified, introjected, and external). The robust weighted least square (WLSMV) estimator was chosen since it is more suited for ordered-categorical data (Beauducel & Herzberg, 2006; Finnery & DiStefano, 2006; Lubke & Muthen, 2004), and it was used by the original developers of the scale. For assessment, comparative fit index (CFI), Tucker-Lewis index (TLI), and root mean square error of approximation (RMSEA) were chosen as an addition to chi-square. These indices were reported to perform quite well with WLSMV (Beauducel & Herzberg, 2006) since chi-square is highly affected by the sample size (Tabachnick & Fidell, 2019). Fit indices are presented in Table 3.6.

Table 3.6

Fit Indices for the Motivation for PhD Studies Scale

Model	χ^2	*CFI*	*TLI*	*RMSEA* [90% CI]
Two-factor CFA	354.311	.94	.92	09 [.08, .10]
Five-factor CFA	239.021	.96	.95	07 [.06, .08]
Second-order CFA	223.569	.97	.96	.07 [.06, .08]

Although fit indices, particularly CFI and TLI, were within the acceptable range for five-factor and second-order CFAs, RMSEA indicates a moderate fit. On the other hand, factor loading of item 4 appeared problematic in each of the models. All tested models with factor loadings are presented in Appendix F However, the deletion of item 4 resulted in estimation problems. For that reason, the *introjected* dimension (including items 2, 4, 6) were excluded from the study. For model

parsimony, it is decided to go with the two-factor model (autonomous and controlled motivation).

Cronbach alpha coefficients were estimated to investigate the reliability of both dimensions. The reliability estimate for the autonomous motivation was calculated as .84, while it was calculated as .80 for the controlled motivation (excluding items of introjected regulation). For the autonomous motivation, item-total correlations calculated showed that all items exceed the threshold of .40, and they ranged between .47 and .68. For the controlled motivation (excluding introjected regulation), item-total correlations also exceeded the threshold of .40, and they ranged between .50 and .73.

3.4.2. Course Satisfaction Scale

Çapa Aydın et al. (2011) developed the Academic Life Scale to assess factors related to the academic satisfaction of graduate students. The scale had ten dimensions. Among them, the course satisfaction dimension with six items was used in the present study. Items were on a 6-point Likert type scale (ranging from 1 "strongly disagree" to 6 "strongly agree"). The course satisfaction scale includes items such as "The courses I take increase/increased my competence in my field," "The courses I took meet/met my future needs."

3.4.2.1. Pilot Study of Course Satisfaction Scale

The Course Satisfaction Scale was piloted with 336 graduate students (51.8% female, 19.1% male). Of the students, 191 (56.8%) were at master level, while 45 (13.5%) were at Ph.D. level. Complete responses were received from 213 graduate students. To detect the factor structure of the 6-item Course Satisfaction Scale, an exploratory factor analysis (EFA) was conducted. Mardia's test of multivariate normality was violated (b2p (8.53) = 59.45, $p < .05$), so the factor structure of the scale was estimated through Principal Axis Factoring. Direct Oblimin Rotation was applied. Kaiser-Meyer-Olkin's measure showed that the assumption of sampling adequacy was satisfied with the value of .88, and Bartlett's test satisfied the assumption of sphericity ($\chi^2(15) = 837.203$, $p < .05$) of the scale. The results showed one factor and explained 69.14% of the variance with an eigenvalue of 4.15, also supported by the Scree test (Figure 3.2).

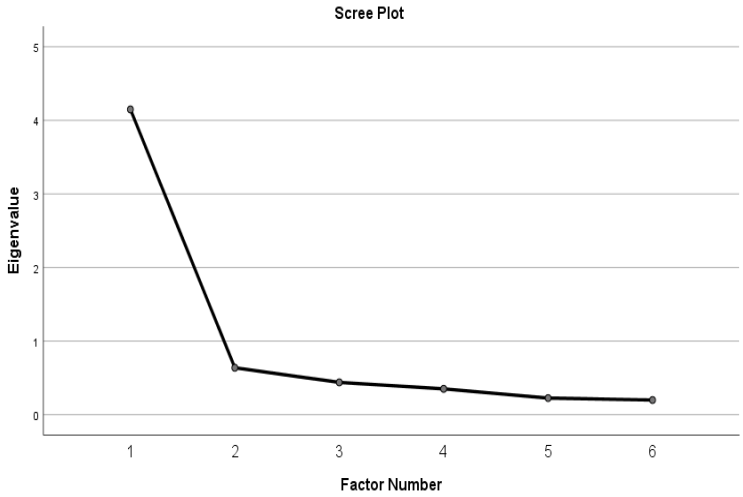

Figure 3.2. Scree test for the Course Satisfaction scale

The factor loadings for each item are given in Table 3.7. The items loaded into one factor, ranging from .61 to .86. Table 3.8 shows the reliability of the scale. Since the deletion of items 1-5 does not lead to an increase in Cronbach's alpha, and the deletion of Item 6 increases only from .91 to .92, all items were decided to be kept on the scale.

Table 3.7.

Factor Loadings for the Course Satisfaction Scale

Items	1
1	.86
2	.83
3	.84
4	.79
5	.83
6	.61

Table 3.8.

Item-total Correlations and Alpha if Item Deleted Values for the Course Satisfaction Scale

	Alpha if item deleted	Item-total correlation
Item 1	.88	.81
Item 2	.88	.78
Item 3	.88	.78
Item 4	.89	.75
Item 5	.88	.78
Item 6	.92	.58

3.4.2.2. Validity and Reliability of Course Satisfaction Scale for the Main Study

To examine the factor structure of the Course Satisfaction Scale, CFA was performed through Mplus 8 (Muthen & Muthen, 2012). The MLM estimator was chosen, and chi-square statistics was further supported by CFI, TLI, and RMSEA due to its sensitivity to sample size (Tabachnick & Fidell, 2019).

Following the required assumption check, the fit of the model was examined. The chi-square statistics was calculated as $\chi^2(8) = 17.545$ ($p < .05$). RMSEA presented a reasonable fit with a value of .06 (90% CI [.01, .09], $p = .37$). CFI and TLI values (.99 and .98, respectively) show a fair-fit (Hu & Bentler, 1999). Factor loadings of the items ranged between .55 and .89, and they all were significant. Between Item 4 and Item 5, a covariance relation was spotted with an error of .26 (Fig 3.3). All in all, the investigation indicated a good fit to the one factored model.

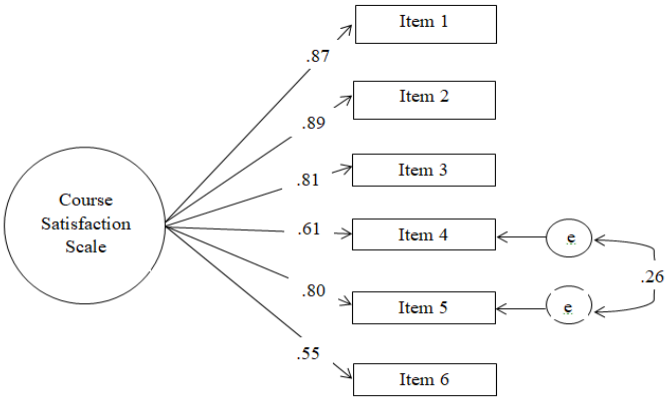

Figure 3.3. Factor loadings for Course Satisfaction Scale

Cronbach alpha value for the scale was calculated as .89 and assured the reliability of it. Item-total correlations ranged from .53 to .80, and all the correlations were higher than .40.

3.4.3. Advisory Working Alliance (AWAI-S)

In order to measure the advisory working alliance, Schlosser and Gelso (2001) developed two instruments: one from students' perspective (i.e., AWAI-S) and one from advisors' (i.e., AWAI-A). Sclosser and Gelso (2001) developed and validated the Advisory Working Alliance Inventory – Student (AWAI-S), which allowed graduate students to evaluate their perceptions of their working alliance with their graduate advisor. The AWAI-S has a total of 30 items that were on a 5-point scale from 1 (strongly disagree) to 5 (strongly agree). Sixteen items were negatively worded. There were three subscales: Rapport (11 items), Apprenticeship (14 items), and Identification-Individuation (5 items). The *Rapport* subscale reflected how well the advisor and advisee get along interpersonally. *Apprenticeship* mirrored the advisee's professional development that was facilitated by the advisor and the work that conducted by them. Last, *Identification-Individuation* echoed how much the advisee wants to be like his or her advisor. Schlosser and Gelso (2001) tested the three-factor structure of the scale across two studies. Coefficient alpha ranged from .90 to .95 for the overall scale, from .84 to

.93 for the *Rapport* subscale, .85 to .92 for the *Apprenticeship* subscale, and from .57 to .77 for the *Identification-Individuation* subscale. For each dimension, a sample item is given in Table 3.9.

Table 3.9.

Sample items of the AWAI-S Scale

Dimensions	Sample item
Rapport	I do *not* feel respected by my advisor in our work together.
Apprenticeship	I learn from my advisor by watching him/her.
Identification-Individuation	I do *not* want to be like my advisor.

3.4.3.1. Adaptation Process of Advisory Working Alliance (AWAI-S)

AWAI-S was adapted to the Turkish language with permission from the developers (Appendix B). First, the scale was translated from English to Turkish by three ELT graduates. These translations were examined by the researchers. The distinctions between the translations were discussed with an external expert, and a draft in Turkish that both parties agree on was created. The draft was back-translated by three different ELT graduates who are not familiar with the original scale. The original scale in English and the back-translation were checked against and revised by the researcher. Last, the final scale in Turkish (Appendix C) was examined by a graduate student for clarity.

3.4.3.2. Pilot Study of Advisory Working Alliance (AWAI-S)

The reliability of the adapted AWAI-S Subscale was examined through a pilot study with 336 graduate students. The participants of the pilot study included 174 (51.8%) female and 64 (19.1%) male, 218 (64.9%) Marmara University students and 15 (4.5%) others, and 191 (56.8%) MS students and 45 (13.5%) PhD students. Among them, 173 answered the AWAI-S. To check the factorial structure of the 30-item AWAI-S, an EFA was used. Mardia's test of multivariate normality showed a violation (b2p (23.84) = 1117.91, $p < .05$), and factorial structure was

extracted through Principal Axis Factoring. The direct oblimin rotation was used as a rotation technique. The value for Kaiser-Meyer-Olkin's measure was .93, which satisfied the sampling adequacy. Moreover, the assumption of sphericity was satisfied according to Bartlett's test ($\chi^2(435) = 2852.464$, $p < .05$). In Table 3.10, the six factors emerged according to the eigenvalue greater-than-one rule and explained 62.58% of the variance. The Scree test is presented in Figure 3.4.

Table 3.10.

Eigenvalues, Percentages of Variance, and Cumulative Percentages for Factors of the AWAI-S (Eig>1)

Factor	Eigenvalue	% of Variance	Cumulative %
Factor 1	11.57	38.56	38.56
Factor 2	2.29	7.63	46.18
Factor 3	1.51	5.03	51.21
Factor 4	1.31	4.36	55.57
Factor 5	1.08	3.60	59.17
Factor 6	1.02	3.41	62.58

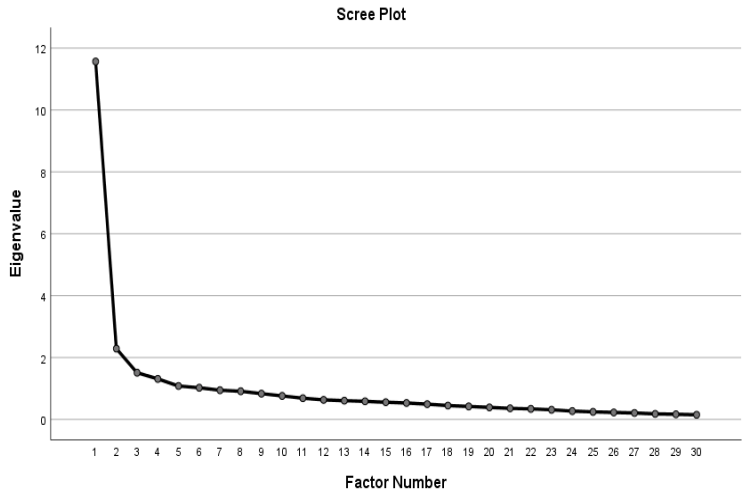

Figure 3.4. Scree test for the AWAI-S

The EFA resulted in a factor structure that was different from the proposed one. Hence another EFA where factor number is limited to three was run. In Table 3.11, the factor loadings of the items are given. However, again, the factors did not emerge as expected, and cross-loadings appeared on five items.

Table 3.11.

Factor Loadings for the AWAI-S

Item	1	2	3
1	**.56**	-.37	.02
2	**.56**	**-.46**	-.16
3	.22	**-.37**	**.50**
4	**.46**	**-.44**	.11
5	.34	.09	-.02
6	**.58**	-.15	.05
7	.29	**-.44**	.09
8	**.53**	-.23	.13
9	-.07	.13	**.35**
10	.35	.00	**.35**
11	-.07	**-.40**	-.08
12	.03	-.15	**.63**
13	.24	-.03	**.45**
14	-.07	**-.57**	.20
15	**.61**	-.05	.31
16	**.56**	.16	.03
17	**.54**	-.37	.12
18	.19	-.05	**.40**
19	**.55**	-.43	-.14
20	.21	**-.40**	.01
21	**.75**	-.15	-.00
22	.17	-.16	**.47**

Table 3.11. (cont'd)

Item	1	2	3
23	.08	**-.76**	.02
24	.36	.01	**.53**
25	**.42**	.04	.19
26	-.01	-.45	**.65**
27	**.47**	-.01	.14
28	.28	**-.41**	**.38**
29	-.07	**-.54**	.02
30	**.48**	.06	**.40**

After examining the structure, it was observed that only the *Rapport* subscale worked among the three. Therefore, an EFA was used to identify the factor structure of the 11-item *Rapport* subscale. The factor structure was extracted through Principal Axis Factoring. Direct Oblimin Rotation was selected. The sampling adequacy was satisfied since Kaiser-Meyer-Olkin's measure was .91. Also, Bartlett's test showed that the assumption of sphericity was met ($\chi^2(55) = 858.265$, $p < .05$). One factor appeared as expected with an eigenvalue of 5.41, explaining 49.16% of the variance. The Scree test supported this result as well (Figure 3.5). The factor loadings for each item of the subscale are given in Table 3.12.

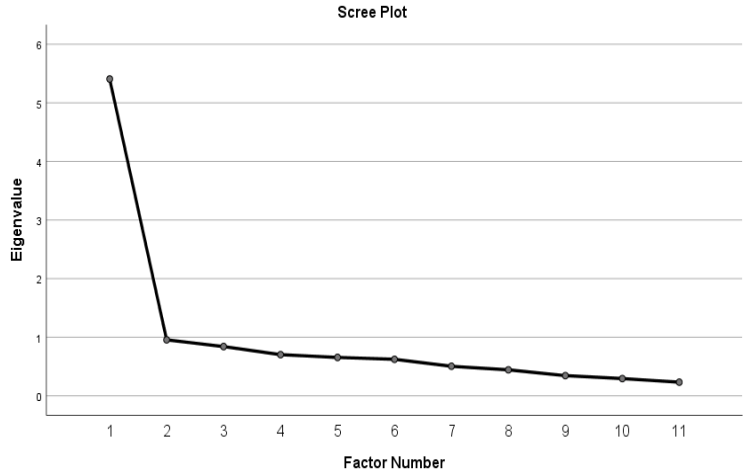

Figure 3.5. Scree test for the AWAI-S-Rapport Subscale

Table 3.12

Factor Loadings for the AWAI-S-Rapport Subscale

Items	1
Item 3	.81
Item 10	.56
Item 12	.65
Item 13	.60
Item 18	.51
Item 22	.65
Item 24	.75
Item 25	.47
Item 26	.80
Item 28	.76
Item 30	.67

The Cronbach alpha value of the subscale is .89. Item-total correlations along with “Alpha if item deleted” are given in Table 3.13.

Table 3.13.

Item-total Correlations and Alpha if Item Deleted Values for the AWAI-S-Rapport Subscale

	Alpha if item deleted	Item-total correlation
Item 3	.87	.74
Item 10	.88	.54
Item 12	.88	.60
Item 13	.88	.55
Item 18	.89	.49
Item 22	.88	.60
Item 24	.87	.71
Item 25	.89	.45
Item 26	.87	.74
Item 28	.87	.71
Item 30	.87	.65

3.4.3.3. Validity and Reliability of AWAI-S-Rapport Subscale for the Main Study

CFA was used to confirm the factor structure of the Turkish version of AWAI-S-Rapport Subscale through Mplus 8 (Muthen & Muthen, 2012). MLM estimator was used for the assessment. CFI, TLI, and RMSEA were given in addition to chi-square since it is sensitive to sample size (Tabachnick & Fidell, 2019). The chi-squared was significant with the value of $\chi^2(43) = 87.902$, $p < .001$. RMSEA, on the other hand, was calculated as .06 (90% CI [.04, .07], $p = .31$) which indicates a good fit. CFI was calculated as .96 and TLI as .95, which indicates a fair-fit (Hu & Bentler, 1999). The factor loadings of the items ranged between .55 and .71 and they all were significant. Examining modification indices indicated that errors of items 3 and 4 have a high covariance; thus, they were allowed to covary in the final model (Figure 3.6).

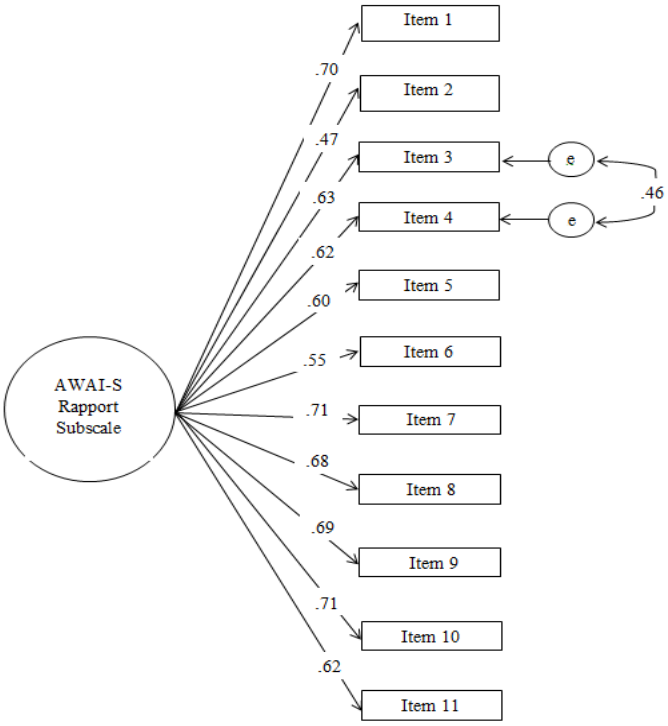

Figure 3.6. Factor loadings for the AWAI-S-Rapport Subscale

The reliability of the subscale was investigated using Cronbach alpha and calculated as .89. All item-total correlations were higher than .40, and they ranged from .43 to .70.

3.4.4. Self-Efficacy Scale

Self-Efficacy Scale (Sverdlik & Hall, 2019) was used to assess the research self-efficacy of graduate students. Sverdlik and Hall (2019) developed an 11-item self-efficacy scale to assess participants' perceived confidence of successfully completing several graduate school tasks. The scale includes items such as "to select a dissertation topic" and "to conduct a thorough literature search" on a 7-point rating scale (from 1 "strongly disagree" to 7 "strongly agree"). The coefficient alpha for the scale was calculated as .88 (Sverdlik & Hall, 2019).

3.4.4.1. Adaptation of Self-Efficacy Scale

The Self-Efficacy Scale was adapted to the Turkish language after the approval of the developers (Appendix B). Three ELT graduates translated the scale

from English to Turkish. The differences between the translations were examined and discussed by the researcher and an external expert, and with their joint decision, a draft in Turkish was developed. After, the draft was back-translated by three different ELT graduates who are foreign to the original scale. Both the original scale in English and the back translations were compared by the researcher, and a final scale in Turkish (Appendix C) was created, which was examined by a graduate student for clarity.

3.4.4.2. Pilot Study of Self-Efficacy Scale

The Self-Efficacy Scale was piloted with a sample of 336 graduate students (51.8% female, 19.1% male). Of the students, 191 (56.8%) were at master level, while 45 (13.5%) were at Ph. D. level. Complete responses were received from 187 students. An EFA was used to find the factor structure of the 11-item Self-Efficacy Scale. Since Mardia's test showed that multivariate normality was violated (b2p (11.45) = 171.31, $p < .05$), Principal Axis Factoring was used as the extraction method. The Direct Oblimin Rotation was selected. The Kaiser-Meyer-Olkin's measure was .87, which satisfied the assumption of sampling adequacy. Additionally, Bartlett's test showed that the assumption of sphericity of the scale was satisfied as well ($\chi^2(55) = 1020.287$, $p < .05$). Three factors emerged according to the eigenvalue greater-than-one rule. However, the first factor with an eigenvalue of 5.28 explained 47.96% of the variance. In addition, the Scree test (Figure 3.7) showed a one-factor structure. Thus, EFA was rerun by setting the number of factors as one. In Table 3.13, the factor loadings for each item are given.

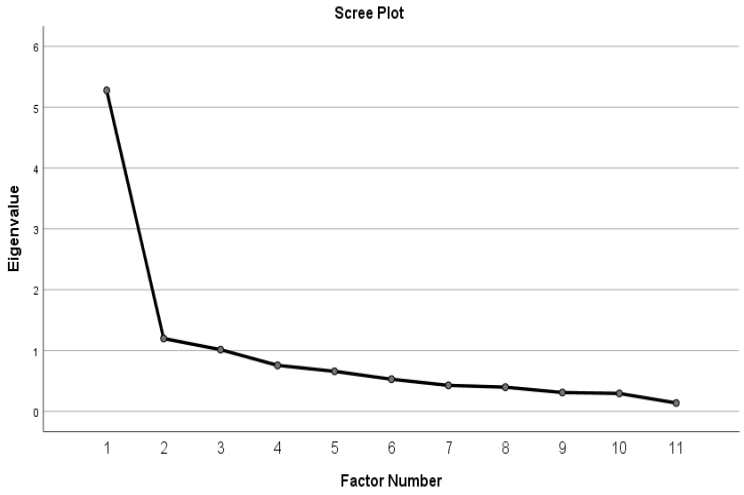

Figure 3.7. Scree test for the Self-Efficacy Scale

Table 3.14.

Factor Loadings for the Self-Efficacy Scale

Items	1
Item 1	.53
Item 2	.59
Item 3	.79
Item 4	.80
Item 5	.75
Item 6	.63
Item 7	.61
Item 8	.65
Item 9	.68
Item 10	.66
Item 11	.45

The Cronbach alpha value for the scale was calculated as .88. Item-total correlations along with "Alpha if item deleted" are given in Table 3.15.

Table 3.15.

Item-total Correlations and Alpha if Item Deleted Values for the Self-Efficacy Scale

	Alpha if item deleted	Item-total correlation
Item 1	.88	.50
Item 2	.88	.55
Item 3	.87	.73
Item 4	.86	.74
Item 5	.87	.69
Item 6	.87	.60
Item 7	.88	.58
Item 8	.87	.62
Item 9	.87	.65
Item 10	.87	.62
Item 11	.89	.42

3.4.4.3. Validity and Reliability of Self-Efficacy Scale for the Main Study

CFA was performed to confirm its one-factor structure of the Turkish version of the Self-Efficacy Scale through Mplus 8 (Muthen & Muthen, 2012). The MLM estimator was chosen for the assessment, and CFI, TLI, and RMSEA were presented as an addition to chi-square due to its sensitivity to sample size (Tabachnick & Fidell, 2019).

Once the assumptions were controlled, the fit of the model was investigated. The chi-square statistics to be significant: $\chi^2(40) = 112.782$, $p < .001$. Additively, the RMSEA value was stated significant and calculated as .07 (90% CI [.06, .09], p =.02), which is a good fit. Both CFI and TLI values -.95 and .93, respectively-indicated a fair-fit (Hu & Bentler, 1999). Factor loadings for each item were significant, and they ranged between .54 and .71. Examination of modification indices showed a high error covariance between item 3 and item 4, item 4 and item 5, item 7 and item 8, item 9 and item 10. Therefore, these error pairs were allowed to covary in the model for a better fit (Figure 3.8).

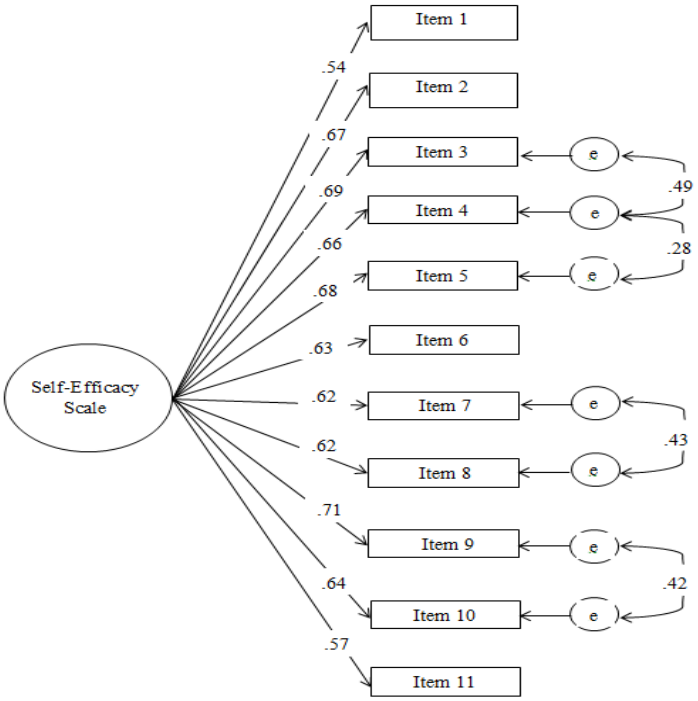

Figure 3.8. Factor loadings for the Self-Efficacy Scale

The reliability of the scale was investigated using Cronbach alpha as .89. Item-total correlations ranged from .48 to .69, so all of them were over .40.

3.5. Research Variables

Academic Status: This discrete and independent variable comprised two levels: Master's (M.S.) and Doctorate (Ph.D.). The scale of measurement is regarded as ordinal.

Phase of Study: This discrete and independent variable included two levels: course phase and thesis/dissertation phase. The scale of measurement is nominal.

Career Plan: This discrete and independent variable involved three levels: academic career, non-academic career, and undecided. The scale of measurement is nominal.

Academic Motivation: Academic motivation of graduate students was measured with the Turkish version of the Motivation for PhD Studies Scale of Lithalien et al. (2015). The scale had two dimensions: autonomous motivation and controlled motivation.

Autonomous Motivation: High scores on the subscale indicated that graduate students persevered their study for the interest and enjoyment (i.e., intrinsic regulation), for personal goals, values, and needs that create the self (i.e., integrated regulation), or for considering it to be important (i.e., identified regulation).

Controlled Motivation: High scores on the subscale indicated that graduate students persevered their study to earn a reward or avoiding a punishment (i.e., external regulation).

Advisory Relationship: Advisory relationship of graduate students was measured by the Turkish version of the Rapport subscale of AWAI of Schlosser and Gelso (2001). Higher scores on the scale refer to having a strong interpersonal connection with the advisor and feeling respected, encouraged, and supported by the advisor.

Course Satisfaction: Course satisfaction was measured by the Courses subscale of Academic Life Scale of Çapa Aydın et al. (2011). Higher scores on the scale refer to higher fulfillment of expectations regarding the courses taken.

Research Self-Efficacy: Research self-efficacy beliefs of graduate students were measured with the Turkish version of the Self-Efficacy Scale created by Sverdlik and Hall (2019). Higher scores on the scale refer to greater self-confidence in accomplishing research-related tasks.

3.6. Data Collection Procedures

An online version of the survey was created using METU Survey Service. Later an application including the instrument (Appendix C) and the consent form (Appendix D) to be used was submitted to the Human Subjects Ethics Committee of METU. The committee approved that the study satisfied the standards in January 2020 (Appendix A).

The data collection process was taken place in two phases: pilot and main study. For the first phase, data were collected from 336 graduate students of two universities (i.e., Marmara University and Başkent University) in the 2019-2020 academic year. In the second phase, data were collected from 403 graduate students of three universities (i.e., Ankara University, Boğaziçi University, Middle East

Technical University) during the first semester of the 2020-2021 academic year. For both phases, permission to conduct the study was obtained from the Institute of Social Science and/or Educational Science of the aforementioned universities. Initially, the data collection was planned to be conducted both via an online survey and face-to-face. However, due to COVID-19, all universities moved to remote education in Turkey. Therefore, the data were collected solely through the online survey. In two of the universities, the Institute sent an email to graduate students enrolled in a program affiliated with the Institute. The email included the survey link, a description of the study, and information about ensuring confidentiality and anonymity (Appendix E). In one university, the Institute also agreed to post the study description and the survey link on their official webpage. Unfortunately, a reminder cannot be sent to the graduate students. For that reason, to increase the response rate, the email addresses of the research assistants were collected from the official websites of the universities. Those students were also invited to participate in the study. Those who voluntarily participated in the study answered all the questions in less than 10 minutes.

3.7. Data Analysis

Once the data collection is completed, the data were downloaded from the METU Survey Service in .xls format. The unsuitable data coming from students (i.e., students studying not in universities or institutes specified in the accessible population, students not specifying the university attended, students studying at masters without thesis programmes, and students not responding to any of the instruments) were deleted from the data file. Data analysis was executed using IBM SPSS 26 for Windows and Mplus 8.

First, confirmatory factor analysis was conducted to examine the suggested higher-order and five-factor models of Motivation for PhD Studies. In order to examine the fit of the model, the following indices were used: chi-square (χ^2), CFI, TLI, and RMSEA. Due to the sensitivity of chi-square to sample size, other indices are also suggested (Byrne, 2012). The two incremental indices – CFI and TLI - should be greater than .90 for a moderate model fit and greater than .95 for a good model fit (Hu & Bentler, 1999). So, the value being close to one signals a well-

fitting model. The RMSEA, on the other hand, is an absolute index of fit, and it investigates the discrepancy between the suggested model and the obtained covariance matrices (Byrne, 2009). Whereas a good model fit requires a value less than .05, a moderate model fit requires a value between .05 and .08 (Browne & Cudeck, 1992). Additionally, the internal consistency of each scale was examined through Cronbach alpha coefficients.

To describe the demographic characteristics of the participants, descriptive statistics were generated, in which mean values, standard deviations, percentages, and frequency values were used.

In order to answer the research question, hierarchical multiple regression analysis was conducted to study the relationship between independent variables and the dependent (outcome) variable. The outcome variable was research self-efficacy, which was continuous. Hierarchical regression analysis was chosen since independent variables entered this predictive equation with an order pre-set by the researcher. This order was determined by the importance of variables and extraneous variables, as suggested in Tabachnick and Fidell (2019). The extraneous variables (i.e., academic status, phase of the study, and career plan) were entered in the first step. The two dimensions of academic motivation (autonomous and controlled motivation) were entered in the second step. In the final step, course satisfaction and advisory relationship were entered into the equation since they theoretically have more importance than extraneous variables.

Academic status, phase of the study, and career plan were categorical, whereas academic motivation, course satisfaction, and advisory relationship were continuous. While academic status and phase of the study had two levels and did not require a coding procedure, the career plan had three levels, and dummy coded variables were created. The “undecided” category was identified as the reference.

3.8. Limitations of the Study

The first limitation was using self-report data collection instruments since they might produce distorted answers in line with social desirability. To avoid or reduce that effect, participants were informed that their responses would be anonymous, and the data will be analysed after removing any identifying

information. However, it is worth noting that social desirability might still have an impact on participants' responses. Second, the study is limited to the graduate students of Institutes of Social Sciences and Educational Sciences. Therefore, generalising the findings to other institutes would not be possible. Also, the participants were from three public universities (i.e., Ankara University, Boğaziçi University, Middle East Technical University), which are located in Ankara and İstanbul. Due to different student profiles of different cities or universities, the ecological generalizability of the study is also restricted. Third, due to the nature of the correlational study, the cause-and-effect relationship among variables cannot be deduced.

CHAPTER 4

RESULTS

This chapter includes findings of descriptive and inferential statistics. Once the statistical assumptions were checked and presented, Hierarchical Regression Analysis was performed to answer the research question.

4.1. Descriptive Statistics

In order to understand the profiles of the participants, descriptive statistics were investigated. Table 4.1 displays the descriptive statistics for academic motivation, course satisfaction, advisory relationship, and research self-efficacy.

Table 4.1.

Descriptive Statistics by Academic Motivation, Course Satisfaction, Advisory Relationship, and Research Self-Efficacy (n = 356)

	M	*SD*
Academic Motivation[1]		
Autonomous Motivation	3.72	0.75
Controlled Motivation	2.83	1.10
Course Satisfaction[2]	4.30	1.11
Advisory Relationship[1]	4.30	0.71
Research Self-Efficacy[3]	5.16	1.06

Note. [1]5-point rating scale. [2]6-point rating scale. [3]7-point rating scale.

Concerning academic motivation, the mean score for autonomous motivation was 3.72 (*SD* = .75), and for controlled motivation, it was 2.83 (*SD* = 1.10). On a 5-point scale, these findings hinted that autonomous motivation scores of graduate students were at the relatively high end of the scale. In contrast, their controlled motivation scores were closer to the middle point. The mean scores of all items of the Turkish version of the Motivation for PhD Studies Scale were also calculated and are given in Table 4.2. When all the items of the scale were sorted, the highest mean score was calculated as 4.20 (*SD* = .93), which belongs to item 7, "Because graduate studies are consisted with my values (e.g., curiosity, ambition, success)." On the other hand, the lowest mean score among all items was 1.88 (*SD* = 1.07), and it was obtained from item 2, "Because my advisor would be disappointed or angry if I gave up."

Table 4.2.

Descriptive Statistics by Items of Motivation for PhD Studies Scale (n = 391)

	M	*SD*
Autonomous Motivation		
Item 1	3.71	1.08
Item 3	2.88	1.24
Item 5	4.14	.99
Item 7	4.20	.93
Item 9	3.19	1.36
Item 11	3.73	1.15
Item 12	4.14	1.04
Item 14	4.06	1.04
Item 15	3.52	1.30

Table 4.2. (cont'd)

	M	*SD*
Controlled Motivation		
Item 2	1.88	1.07
Item 4	1.89	1.42
Item 6	3.05	1.38
Item 8	2.97	1.30
Item 10	3.03	1.38
Item 13	2.67	1.31

For the Course Satisfaction Scale, the mean score of graduate students was 4.30 (*SD* = 1.11). Since this is a 6-point scale, the mean score can be accepted between the middle and high end of the scale. The mean scores for each item are given in Table 4.3. The highest mean score of all items was calculated as 4.72 (*SD* = 1.28), and it belonged to item 1, "The courses I take increase/increased my competence in my field." Moreover, the lowest mean score was 3.61 (*SD* = 1.59) of item 6, "The course I took support/supported student collaboration and group work."

Table 4.3.

Descriptive Statistics by Items of Course Satisfaction Scale (n = 400)

	M	*SD*
Item 1	4.72	1.28
Item 2	4.25	1.33
Item 3	4.64	1.26
Item 4	4.13	1.53
Item 5	4.40	1.43
Item 6	3.61	1.59

The mean score for the AWAI-S Rapport Subscale of graduate students was 4.30 (SD = .71) on a 5-point scale, which can be accepted as high. The mean scores of each item are given in Table 4.4. The highest mean score of 4.59 (SD = .83) was of the reverse coded item 3, "My advisor is not kind when commenting about my work." On the other hand, the lowest mean value was 4.08 (SD = 1.10) of the reverse coded item 2, "I am often intellectually lost during meetings with my advisor."

Table 4.4.

Descriptive Statistics by Items of AWAI-S-Rapport Subscale *(n = 351)*

	M	*SD*
Item 1	4.44	.84
Item 2	4.08	1.10
Item 3	4.59	.83
Item 4	4.48	.98
Item 5	4.20	1.16
Item 6	4.39	1.08
Item 7	4.38	1.03
Item 8	4.15	1.21
Item 9	4.23	.90
Item 10	4.14	1.05
Item 11	4.14	1.11

Lastly, the mean score for the Self-Efficacy Scale was 5.16 (*SD* = 1.06) on a 7-point scale. Mean scores of all items are presented in Table 4.5. Out of the 11 items, the highest mean score was 6.02 (*SD* = 1.11) of item 9, "To satisfy the requirements of my graduate programme." The lowest one was 4.30 (*SD* = 1.75) of Item 7, "Apply for an award or a funding."

Table 4.5.

Descriptive Statistics by Items of Self-Efficacy Scale *(n = 376)*

	M	*SD*
Item 1	5.84	1.25
Item 2	4.98	1.58
Item 3	5.36	1.42
Item 4	4.95	1.56
Item 5	4.74	1.66
Item 6	5.02	1.62
Item 7	4.30	1.75
Item 8	5.01	1.64
Item 9	6.02	1.11
Item 10	5.62	1.40
Item 11	5.12	1.96

4.2. Results of Hierarchical Regression Analyses

Hierarchical regression analysis was performed to answer the research question: "How well do academic status, phase of the study, career plan, academic motivation, course satisfaction, and advisory relationship predict academic research self-efficacy of graduate students?" The independent variables were entered in three blocks:

1. Academic status, phase of the study, and career plan;
2. Autonomous motivation and controlled motivation;
3. Course Satisfaction and advisory relationship.

4.2.1. Assumptions of Hierarchical Regression Analysis

Assumptions of hierarchical regression analysis for the variables are as follows: (1) adequate sample size, (2) absence of outliers, (3) normality of residuals, (4) linearity, (5) homoscedasticity, (6) absence of multicollinearity, and (7) independence of residuals (Tabachnick & Fidell, 2019).

First, the adequacy of sample size was assessed based on Tabachnick and Fidell's (2019) formula: $N \geq 50 + 8m$, where m stands for the independent variables. Since there are 7 independent variables in the study, the minimum sample size should be 98. So, 403 respondents satisfy the minimum sample size to conduct regression. Second, to check the multivariate absence of outliers, Mahalanobis Distance, Cook's Distance, Centred Leverage Value, and Standardised DF Beta values were generated. Mahalanobis Distance (df = 6) should be lower than 22.46 where p = .001. One of the cases had a distance of 28.11, which was beyond the recommended value. On the other hand, Cook's Distance, Centered Leverage Value, standardised DF Beta indicate an absence of outliers.

To check the normality of residuals, the histogram and PP plot of residuals were examined. The histogram and PP plot showed an almost normal distribution. Partial regression plots were examined to check the linearity of residuals, and all of the plots indicated no violation. Furthermore, the scatter plot of predicted value and residual was examined to check the homoscedasticity of residuals, and no pattern was observed, indicating no concern for violation. Multicollinearity was checked since highly correlated two or more predictors in a regression model may lead to extreme complications and unstable results (Leech, Barrett, & Morgan, 2005). To check the multicollinearity among the independent variables, Pearson correlations, tolerance, and variance inflation factor (VIF) values were examined. In order to avoid multicollinearity, correlations among the independent variables should not be greater than .70, tolerance value needs to be greater than .20, and VIF value needs to be less than 4. In this research, correlations ranged between -.00 and .43, the tolerance values ranged between .75 and .99, and VIF values ranged between 1.01 and 1.33. Thus, it was concluded that there was no concern for multicollinearity assumption within this data set. Last, to check the independence of residuals, the Durbin-Watsons statistic was used. The Durbin-Watson value for the data was calculated as 1.96, which is quite close to 2 and indicates evidence for the independence of the residuals (Field, 2020).

4.2.2. Intercorrelations among Variables

The role of each independent variable on the dependent variable was investigated before investigating the whole model. The results are given below in Table 4.6. Correlations with the dependent variable (i.e., research self-efficacy) ranged between .03 and .48. The highest correlation appeared with the autonomous motivation, while the smallest and non-significant correlation with the controlled motivation. Another non-significant correlation was found with the phase of the study, indicating that there is no significant difference in research self-efficacy between students at the thesis phase and students at the course phase. Other predictors were significantly related to research self-efficacy. Being a Ph.D. student, having high autonomous motivation, being satisfied with the courses taken, and having a good advisory relationship were associated with high research self-efficacy. In addition, graduate students having an academic career plan tend to have higher self-efficacy than graduate students having a non-academic career plan or undecided graduate students.

4.2.3. The Influence of Academic Status, Phase of Study, Career Plan, Academic Motivation, Course Satisfaction, and Advisory Relationship on Research Self-Efficacy

The results of hierarchical regression analysis with three steps are presented in Table 4.7. In the first step, the three categorical predictors were entered into the equation. Model was significant, F_1 (4, 351) = 6.14, p = .00. While academic status and phase of the study were not significant predictors, career plan was significant. Both dummy-coded variables of career plan, in which academic career was the reference category, were negatively correlated with research self-efficacy. That is, graduate students with non-academic career plans and who are undecided about their career were found to be significantly less efficacious than graduate students with academic career plans. Each coded variable uniquely explained 2% and 3% of the variance in research self-efficacy.

In the second step, once the first set of variables was controlled, the model with two types of academic motivation was significant, F_2 (6, 349) = 20.73, p = .00. That is to say, autonomous motivation and controlled motivation of graduate

students were statistically significantly contributed to their research self-efficacy. As expected, autonomous motivation was positively correlated with research self-efficacy, while controlled motivation was negatively correlated with it. That is to say, research self-efficacy of graduate students increases with an increase in autonomous motivation, whereas with a decrease in controlled motivation. Autonomous motivation was the most salient predictor, explaining 20% of the variance in research self-efficacy.

In the third step, after controlling for the first set of personal variables and academic motivation, course satisfaction and advisory relationship significantly contributed to their research self-efficacy, F_3 (8, 347) = 22.55, p = .00. Both course satisfaction and advisory relationship were significant and positively, uniquely explaining 2% and 4% of the variance In research self-efficacy, respectively. As course satisfaction and advisory relationship increase, research self-efficacy of graduate students increases, as well.

The first model explained 6.5%, the second model explained an additional 19.7%, and the third model explained an additional 7.9% of the variation in research self-efficacy. Overall, 34.2% of the variance was explained.

4.3. Summary of Results

This study focused on the predictive effect of academic status, phase of the study, career plan, academic motivation, course satisfaction, and advisory relationship of graduate students on their research self-efficacy. A hierarchical regression analysis was conducted in order to examine the influence of the independent variables on research self-efficacy of the graduate students in three blocks: (1) academic status, phase of the study, career plan, (2) autonomous motivation and controlled motivation, and (3) course satisfaction and advisory relationship. All three steps significantly contributed to this model and overall explained 34.2% of the variance. Separately, the first step explained 6.5%, the second explained 19.7%, and the third explained 7.9% of the variance. The most salient predictor was autonomous motivation, followed by advisory relationship, career plan, and course satisfaction. The controlled motivation, although significant, only explained 1% of the variance.

Table 4.6.

Intercorrelations for Research Self-Efficacy and Independent Variables

Variable	1	2	3	4	5	6	7	8
Research self-efficacy	.14*	-.06	-.12*	-.18*	.48*	.03	.38*	.37*
Independent variables								
1. Academic status	-							
2. Phase of study	-.05	-						
3. Non-academic career vs academic career	-.14*	.02	-					
4. Undecided vs academic career	-.22*	.07	-.18*	-				
5. Autonomous motivation	.03	-.15*	-.14*	-.19*	-			
6. Controlled motivation	-.02	-.08	-.08	-.09*	.26*	-		
7. Course satisfaction	-.04	-.10*	-.00	-.12*	.43*	.08	-	
8. Advisory relationship	.10*	.05	-.05	-.04	.24*	-.86	.31*	-

*$p < .05$

Table 4.7

Summary of Hierarchical Regression Analysis of Research Self-Efficacy

Variable	*B*	*SEB*	*B*	sr^2	*F*	R^2	ΔR^2
Model 1					6.54*	.065	.065
Academic status	.15	.11	.07	.01			
Phase of Study	-.10	.12	-.04	-.00			
Career plan							
Non-academic career vs academic career	-.44	.16	-.15*	.02			
Undecided vs academic career	-.54	.15	-.19*	-.03			
Model 2					20.73*	.263	.197
Autonomous motivation	.67	.07	.48*	.20			
Controlled motivation	-.10	.05	-.11*	.01			
Model 3					22.55*	.342	.079
Course satisfaction	.16	.05	.16*	.02			
Advisory relationship	.32	.07	.22*	.04			

*$p < .05$

CHAPTER 5

DISCUSSION

The purpose of the last chapter is to clarify the findings of the present study regarding the related literature. First, the results are set side-by-side with the previous related research findings to understand the extent of their correspondence. Second, possible implications of the results for educational practices are discussed. Last, recommendations for further research are given.

5.1. Conclusion of the Results

The findings of the current study elucidated the roles of academic status, phase of the study, career plan, academic motivation, course satisfaction, and advisory relationship of graduate students of the Institute of Social Sciences and Institute of Educational Sciences of three universities in Turkey in their research self-efficacy. This emphasizes the interrelatedness of the aspects of a graduate learning environment. In essence, the study intended to enlighten the research self-efficacy beliefs of graduate students, which touches many other facets of graduate education experience. In return, if improved, it will be beneficial for the student, faculty, institution, country, and the world.

A three-step hierarchical regression model was built to explain research self-efficacy of graduate students: (1) academic status, phase of study, career plan, (2) academic motivation (i.e., autonomous motivation and controlled motivation), and (3) course satisfaction and advisory relationship. The model successfully predicted 34.2% of the research self-efficacy. The findings showed the predictive effect of graduate students' academic motivation on their research self-efficacy. The model, including academic motivation variables, was stronger than the other's. Autonomous motivation was the most salient predictor of the model, and controlled

motivation was still a significant predictor though the effect was limited to 1%. Whereas autonomous motivation positively predicted research self-efficacy, controlled motivation predicted it negatively. In other words, high levels of autonomous motivation were associated with a higher research self-efficacy. The name of the term "autonomous motivation" comes from the word "autonomy." Having motivation in an autonomous way hints at autonomy or independence. Hence, the graduate students who are motivated autonomously also likely have the autonomy to conduct the research and are efficacious to do so. Since they are doing it because they want to, they are more likely to take the responsibility and develop research self-efficacy. In contrast, high levels of controlled motivation predicted a lower research self-efficacy for graduate students. Being motivated due to societal assertiveness is controlling behaviour, and where control exists, independence might be hindered, or the ability of self-view might not be well-developed, including self-efficacy. This finding means that students who are motivated because of their interest and enjoyment, their personal goals, or because they consider the task to be important were likely to have a high research self-efficacy. In contrast, those who are motivated to earn an award or avoid a punishment were likely to have a low research self-efficacy. These results are consistent with the previous research on the relationship between perceived competence and the two types of motivation. Litalien and Guay (2015) discovered the association between perceived competence and autonomous motivation and the negative correlation between perceived competence and controlled motivation in their study. Although research self-efficacy and perceived competence are not precisely the same, they are measured similarly. For instance, an item of perceived competence read, "I was successfully completing difficult tasks and projects." This item is conceptually similar to the items of research self-efficacy. In Turkey, the present study is the first to show the predictive role of autonomous and controlled motivation on the research self-efficacy of graduate students in Turkey.

Another finding was the significant association between advisory relationships and research self-efficacy. Students with good interpersonal relationships with their advisor where they feel supported and respected were likely

to have a high research self-efficacy. This reinforced the findings of earlier research. Morrison and Lent (2014) found that the graduate students with better advisory relationships had higher research self-efficacy as well. This finding is coherent with Bandura's (1997) theory. Verbal persuasion, as a source of self-efficacy, can be experienced through the advisory relationship. The words and support of advisors might be more effective in facilitating or hindering the self-efficacy of advisees since they are trusted (Usher & Pajares, 2008). Experiencing the advisory relationship as a mentorship, and being honoured, supported, encouraged, and guided by a positive role model in the relationship allow students to be satisfied with it (Schlosser et al., 2003). The students who feel neglected in the relationship are not only dissatisfied with it but also have less self-efficacy. Hence, having a satisfying advisory relationship, or in other words, being psychologically mature (Goldman & Goodboy, 2017), honest and helpful (Sverdlik et al., 2018), having verbal and written terms on the relationship and revising them when necessary (Parker-Jenkins, 2018), meeting regularly, having parallel communication styles and needs, and being open to both giving and receiving feedback (Sverdlik et al., 2018) could be useful in increasing the self-efficacy of graduate students. In Turkey, though a correlation between advisory satisfaction and different types of support was presented (Aydın et al., 2013), a connection between research self-efficacy and advisory relationship was not established before. With this study, it can be seen that Turkish graduate students' research self-efficacy is also highly affected by their advisory relationship.

Course satisfaction also contributed to a higher research self-efficacy. In this variable, students were asked to evaluate their courses during their graduate program. The results showed that higher levels of course satisfaction predicted a higher level of research self-efficacy. Some items of the scale correspond to mastery experience, which is a crucial source proposed by Bandura (1997). For example, an item read, "Courses in my programme formed a basis to conduct an independent research." Thus, having these experiences boost graduate students' confidence in conducting research. Similarly, Egbert (2013) concluded that a higher level of course satisfaction indicated a higher self-efficacy. Despite the lack of

parallel research in the literature for research self-efficacy precisely, studies showing the relationship between experience and self-efficacy imply the significance of the successful experience to enhance the sense of efficacy. Bandura (1997) put forward mastery experience as the most powerful source of self-efficacy. In connection with this, offering students courses to gain mastery experience appropriate to their level can help increase their self-efficacy. Previous to this study, Yasan (2011) stated that research assistants are aware of the significance of research methods courses on altering research skills, and Beisenbayeva (2017) reported that Turkish graduate students take adequate courses to develop their scientific research skills. However, no predictive effect of course satisfaction on research self-efficacy was found. The current study findings showed that the role of mastery experience gained through graduate courses in enhancing research self-efficacy is also valid in the Turkish context.

The combination of academic status, phase of the study, and career plan of graduate students entered in the regression equation in the first step as controlling variables. Though research self-efficacy of graduate students has been mainly investigated on Ph.D. students (e.g., Lambie & Vaccaro, 2011; Lambie et al., 2014; Overall et al., 2011) and there is not much research on master students or of comparison of master and doctoral students, difference by academic status in self-efficacy was expected since a correlation was hinted in the literature. In their study on research self-efficacy, Rezaei and Zamani-Miandashti (2013) discovered that the research self-efficacy score of doctoral students was significantly higher than master students', which was supported in the Turkey context by Odacı's (2013) study as well. Since Ph.D. students had more mastery experience than M.S. students, a higher research self-efficacy was expected (Bandura, 1997). Similarly, difference by study phase would be expected in favour of the students at their thesis/dissertation phase due to previous literature. For example, collecting data from doctoral students in Canada, Sverdlik and Hall (2020) found that self-efficacy was highest at the dissertation phase compared to coursework and comprehensive exam phases. Again, since students at their thesis/dissertation phase had more mastery experience opportunities, a higher research self-efficacy was expected

(Bandura, 1997). On the contrary, in the present study, research self-efficacy did not differ by either academic status (master vs. doctoral students) or phase of the study (course vs. thesis).

On the other hand, a significant difference was spotted with the career plan. The results indicated that aspired academicians were more efficacious than those who plan a non-academic career or those who are undecided. This difference tells that the graduate students who aspire to be academics more strongly believe in their ability to research than those who are not interested in being academics or unsure about being one. One possible explanation might be that students who had started their graduate study for reasons other than being academics might be relatively unbothered about their research skills and not show effort to improve their skills. Due to the lack of relevant literature, neither support nor disagreement appeared for this finding in either Turkish or foreign contexts.

To conclude, the role of academic status, phase of the study, career plan, academic motivation, course satisfaction, and advisory relationship of graduate students on their research self-efficacy was explored in this study. Overall, all three blocks significantly contributed to the model and explained 34.2% of the variance. All variables except academic status and phase of the study were significant predictors of research self-efficacy. The saliency of the predictors decreased in the following order: autonomous motivation, advisory relationship, career plan, and course satisfaction. Among them, only controlled motivation had a negative relationship with research self-efficacy, and despite its significance, it only explained 1% of its variance.

5.2. Implications for Practice

First and foremost, graduate studies are an essential part of the system and must be studied. Despite the increase in registration, a similar regular increase in graduation cannot be observed in Turkey (Günay, 2018). In the 2019-2020 academic year, only 17.18% of the registered graduate students graduated (Yükseköğretim Bilgi Yönetim Sistemi (n.d.). Even though this is a tragedy for the graduate students themselves, they are not the only ones that are affected by it since these problems might also influence the departments and institutions. Therefore, the

current study aimed to investigate certain aspects of graduate education with the core motivation of improving it.

The current study suggested that graduate students' beliefs and perceptions have central importance in graduate education. Experiences that aim to fulfill their subjects' further goals must consider their perspective. The way to raise researchers who are self-sufficient and able to produce knowledge is to provide them with an experience where they can learn to trust their skills. For that very reason, studying the research self-efficacy of graduate education is utterly important. Research self-efficacy is a critical concept in graduate education. It affects not only the graduate experience but also upward experience in life. Its position as a key point for productivity (Lambie et al., 2014; Lambie & Vaccaro, 2011; Morrison & Lent, 2014; Odacı,2013; Rezaei & Zamani-Miandashti, 2013) and dropout intentions (Litalien & Guay, 2015) makes it a non-negligible part of graduate education. Falling into error and reading research-related experiences or beliefs of students solely on students is possible. However, students' research outcomes should not be solely on them (Lambie & Vaccaro, 2011). There are students with little or no research experience who may be unsure of their goals and expectations. Faculty should proactively work with students to address their needs and expectations (Kuo et al., 2017).

The results agreed with the earlier studies of the importance of academic motivation, its relation with other aspects such as research self-efficacy (Salehi et al., 2013), productivity (Fernet et al., 2004), attrition (Litalien et al., 2015; Sverdlik et al., 2018), advisory relationship (Gelso et al., 2013; Sverdlik et al., 2018), and the priority of autonomous motivation over controlled motivation (Deci & Ryan, 2008). It was previoulsy suggested that graduate programmes should limit extrinsic rewards and foster intrinsic motivation in the research process (Kuo et al., 2017). Similar to it, increasing autonomous and decreasing controlled motivation to increase research self-efficacy is suggested in the present study. Since autonomous motivation is the most salient predictor for research self-efficacy, allowing students to develop autonomous motivation has the utmost importance on their research self-efficacy.

The importance of course satisfaction and its relationship with research self-efficacy was emphasised in this study as well as previous studies. Its connection to interest in research (Meyers et al., 2000) and advisory relationship (Çapa Aydın et al., 2011) only increases its importance. So, while creating and transmitting courses of a programme, accommodating students' needs and expectations is for the greater good and should not be neglected. Designing courses in a way that students can have mastery experiences that are compatible with their needs will not only keep them satisfied, but also increase their research self-efficacy.

The significant effect of the advisory relationship on graduate education and its correlation with productivity (Gelso et al., 2013), timely graduation (Gardner, 2007), success (Schlosser & Gelso, 2001) has been repeatedly reported in the literature. This study further confirmed the role of the advisory relationship on research self-efficacy. Since the subject of graduate education is human, the plan for advisory relationship needs to be dynamic and adaptive. Advisory relationships, in nature, change over time, and terms of it might be discussed by the parties. An advisory relationship policy at a minimum is recommended (Gunnarsson, Jonasson, & Billhult, 2013) to be context-specific, institutionally developed, based on an understanding of mutual responsibilities and accountability, within an ethos of respect, and disseminated verbally and in written form at the beginning of the programme. It requires adequate monitoring and reporting of student progress, robust mechanisms for changing the advisor, and regular opportunities for student feedback and evaluation by all stakeholders. While planning the advisory relationship, institutions should consider its nature and review the progress throughout the period.

5.3. Recommendations for Further Research

The present study attempted to fill the gap of research on graduate education experience in Turkey. Though some awareness has been shaped thanks to it, so have new questions. For that reason, possible exploration ideas for future studies are given under this title.

Academic motivation, course satisfaction, advisory relationship, and research self-efficacy of the participants were measured through self-report items,

and it was designed as a correlational study. It would be better if it were further supported by a qualitative research. Interviews with graduate students and advisors would help delve into the advisory process and allow identifying other sources of research self-efficacy. Also, as data were collected from only three state universities in Turkey, external validity is limited. To increase the generalizability, the study might be replicated with different populations. In addition, the same model can be tested with different institutes.

Moreover, the model built in this study explained a decent variance of research self-efficacy of graduate students. Other variables such as research interest (e.g., Lambie et al., 2014) and productivity (e.g., Odacı, 2013) may be included for a better predictive model for research self-efficacy of graduate students.

In the present study, data were collected at a single time point. A longitudinal design can be utilized in future studies to investigate the change in the relationship examined here.

Last, some of the instruments that are used in this study have some psychometric problems. “Introjected regulation” dimension of The Motivation for PhD Studies Scale did not work as proposed. Although the AWAI-S is the most used instrument, only the Rapport dimension produced valid and reliable scores. Therefore, only this dimension was included in this study. Both of these scales were adapted into Turkish within the context of this study. Further validity studies are warranted.

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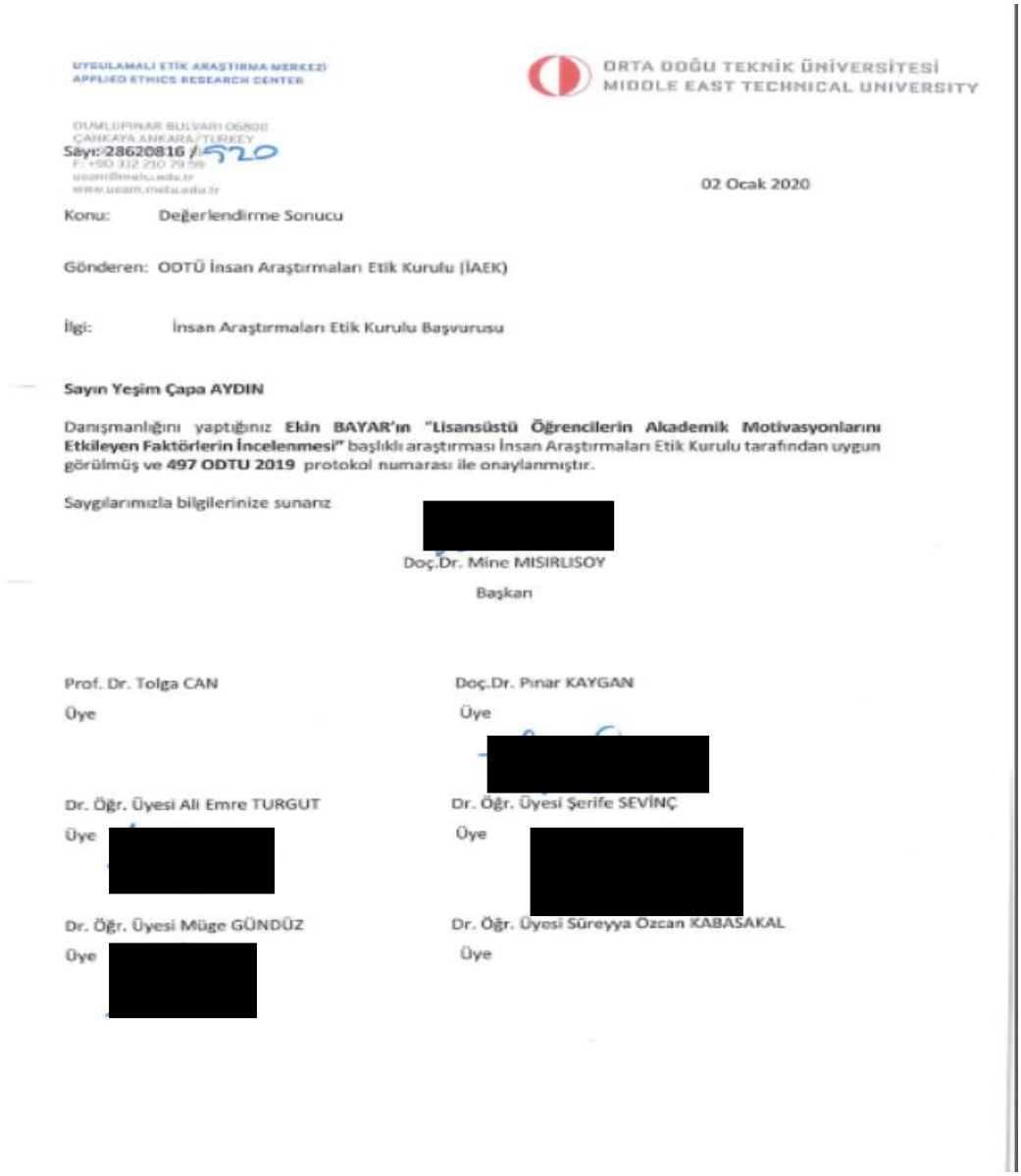
APPENDICES

A. APPROVAL OF THE METU HUMAN SUBJECTS ETHICS COMMITTEE



UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
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02 Ocak 2020

Konu: Değerlendirme Sonucu

Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (İAEK)

İlgi: İnsan Araştırmaları Etik Kurulu Başvurusu

Sayın Yeşim Çapa AYDIN

Danışmanlığını yaptığınız **Ekin BAYAR'ın "Lisansüstü Öğrencilerin Akademik Motivasyonlarını Etkileyen Faktörlerin İncelenmesi"** başlıklı araştırması İnsan Araştırmaları Etik Kurulu tarafından uygun görülmüş ve **497 ODTU 2019** protokol numarası ile onaylanmıştır.

Saygılarımızla bilgilerinize sunarız

[redacted]

Doç.Dr. Mine MISIRLISOY
Başkan

Prof. Dr. Tolga CAN
Üye

Doç.Dr. Pınar KAYGAN
Üye

[redacted]

Dr. Öğr. Üyesi Ali Emre TURGUT
Üye [redacted]

Dr. Öğr. Üyesi Şerife SEVİNÇ
Üye [redacted]

Dr. Öğr. Üyesi Müge GÜNDÜZ
Üye [redacted]

Dr. Öğr. Üyesi Süreyya Özcan KABASAKAL
Üye

B. APPROVAL OF THE AUTHORS OF THE SCALES

Motivation for PhD Studies

Permisson for the use of MPhD Scale Inbox ×

ekin bayar [redacted] Wed, 6 Nov 2019, 21:05

to David.Litalien

Hello Dr. Litalien,

My name is Ekin Bayar, and I am studying Curriculum and Instruction (MS) at Middle East Technical University in Turkey. I wish to use the "Motivation for PhD Studies" shortened scale (15 items)* for my thesis, and therefore am asking for your permission to interpret the measure to Turkish and use it, and also for a copy of the instrument.

* Litalien, D., Guay, F., & Morin, A. J. (2015). Motivation for PhD studies: Scale development and validation. Learning and Individual Differences, 41, 1-13.

Thank you for your time in advance.

Kind regards,

--
Ekin Bayar

David Litalien [redacted] Fri, 8 Nov 2019, 20:14

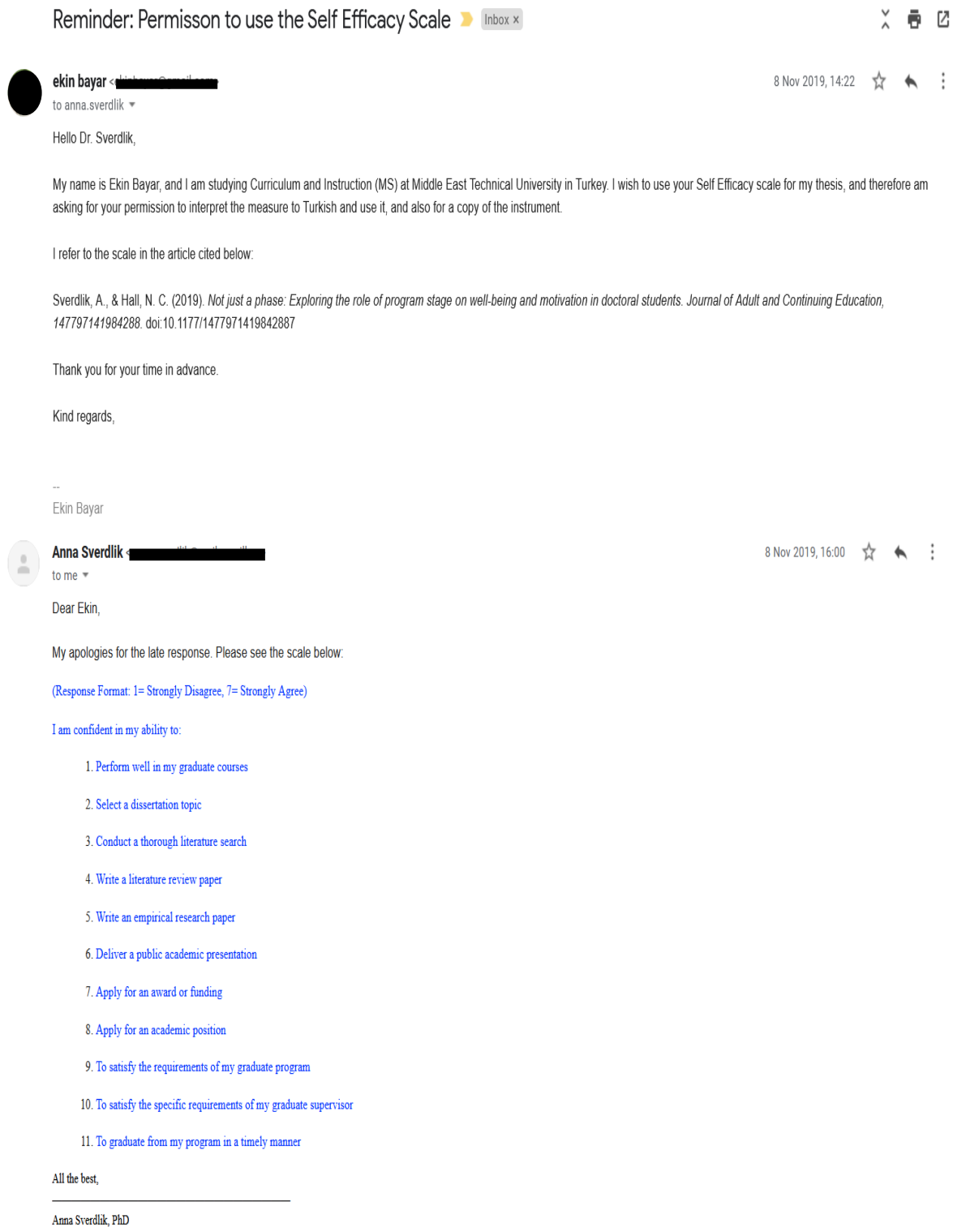
to me

Dear Ekin,

The scale can be freely used as long as you cite the reference you mentioned in you email. I would be glad to have it translate in Turkish! The English items are in the Appendix of the article you cite. You can probably find it, if not, try with Corpus Ulaval.

David

Self-Efficacy Scale



Reminder: Permisson to use the Self Efficacy Scale Inbox ×

ekin bayar <[redacted]> 8 Nov 2019, 14:22

to anna.sverdlik

Hello Dr. Sverdlik,

My name is Ekin Bayar, and I am studying Curriculum and Instruction (MS) at Middle East Technical University in Turkey. I wish to use your Self Efficacy scale for my thesis, and therefore am asking for your permission to interpret the measure to Turkish and use it, and also for a copy of the instrument.

I refer to the scale in the article cited below:

Sverdlik, A., & Hall, N. C. (2019). *Not just a phase: Exploring the role of program stage on well-being and motivation in doctoral students. Journal of Adult and Continuing Education, 147797141984288*. doi:10.1177/1477971419842887

Thank you for your time in advance.

Kind regards,

--
Ekin Bayar

Anna Sverdlik <[redacted]> 8 Nov 2019, 16:00

to me

Dear Ekin,

My apologies for the late response. Please see the scale below:

(Response Format: 1= Strongly Disagree, 7= Strongly Agree)

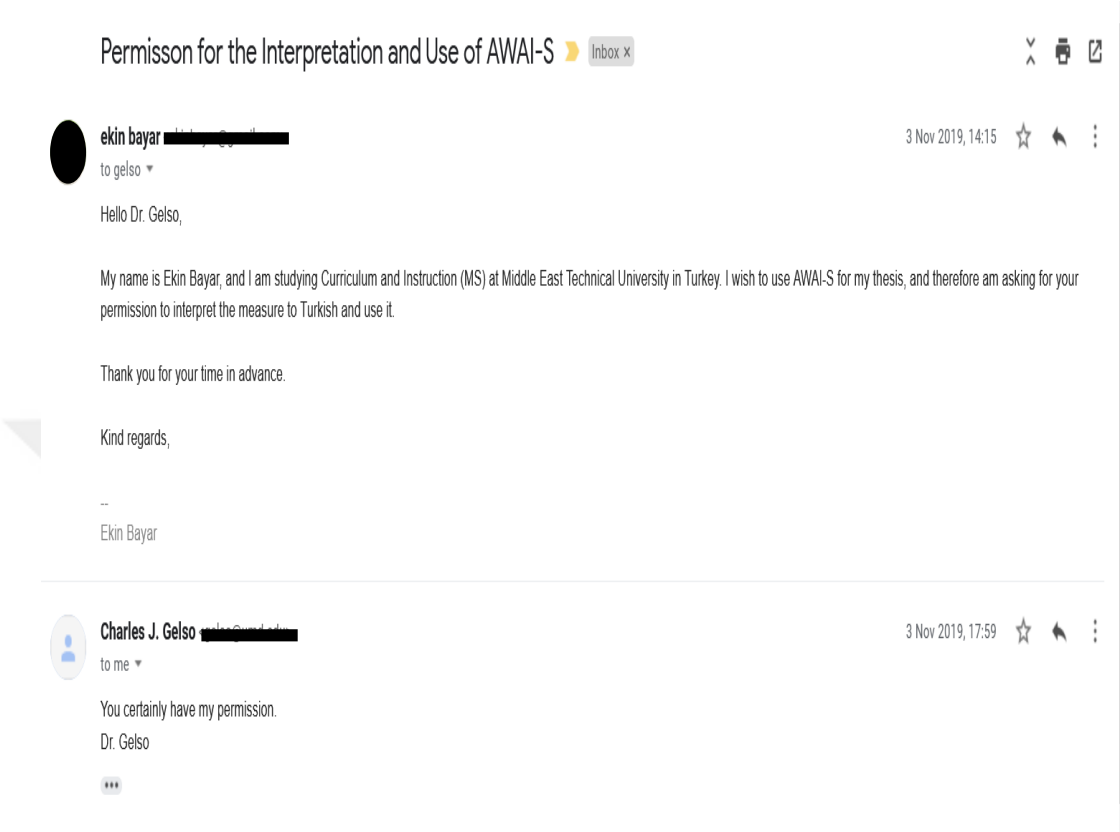
I am confident in my ability to:

1. Perform well in my graduate courses
2. Select a dissertation topic
3. Conduct a thorough literature search
4. Write a literature review paper
5. Write an empirical research paper
6. Deliver a public academic presentation
7. Apply for an award or funding
8. Apply for an academic position
9. To satisfy the requirements of my graduate program
10. To satisfy the specific requirements of my graduate supervisor
11. To graduate from my program in a timely manner

All the best,

Anna Sverdlik, PhD

AWAI-S



Permisson for the Interpretation and Use of AWAI-S Inbox ×

ekin bayar [redacted] 3 Nov 2019, 14:15

to gelso

Hello Dr. Gelso,

My name is Ekin Bayar, and I am studying Curriculum and Instruction (MS) at Middle East Technical University in Turkey. I wish to use AWAI-S for my thesis, and therefore am asking for your permission to interpret the measure to Turkish and use it.

Thank you for your time in advance.

Kind regards,

--
Ekin Bayar

Charles J. Gelso [redacted] 3 Nov 2019, 17:59

to me

You certainly have my permission.
Dr. Gelso

C. SAMPLE ITEMS FROM THE SCALES

Sevgili Lisansüstü Öğrencisi,

Bu araştırmanın amacı, öğrencilerin lisansüstü eğitimindeki deneyimlerini incelemektir. Bu amaçla, anket 78 sorudan oluşmakta ve cevaplandırma süresi yaklaşık 15 dakikadır. Soruları içtenlikle doldurmanız, daha doğru sonuçlara ulaşmamızı sağlayacaktır. Sonuçlar yalnızca bilimsel araştırma amaçlı kullanılacaktır. Soruları boş bırakmamaya ve sadece tek bir seçenek işaretlemeye özen gösteriniz. Katıldığınız için teşekkür ederiz.

Ekin Bayar (*[redacted]*)
Doç. Dr. Yeşim Çapa Aydın (*[redacted]*)
ODTÜ Eğitim Bilimleri Bölümü

BÖLÜM I: KİŞİSEL BİLGİLER

1. **Akademik durumunuz:**
   - ☐ Tezsiz Yüksek Lisans
   - ☐ Tezli Yüksek Lisans
   - ☐ Tezsiz Yüksek Lisans Sonrası Doktora
   - ☐ Tezli Yüksek Lisans Sonrası Doktora
   - ☐ Bütünleşik Doktora
2. **Lisansüstü eğitiminizde şu an hangi aşamasındasınız?**
   - ☐ Bilimsel hazırlık
   - ☐ Ders aşaması
   - ☐ Tez aşaması
3. **Lisansüstü eğitiminiz sonrası kariyer planınız nedir?**
   - ☐ Üniversitede akademik bir kariyer planlıyorum.
   - ☐ Doktora eğitimimle ilgili üniversite dışında bir kurumda çalışacağım.

☐ Doktora eğitimimle ilgili olmayan bir kurumda çalışacağım.

☐ Bağımsız çalışacağım.

☐ Kararsızım.

☐ Diğer: *(Lütfen belirtiniz)*……..

BÖLÜM II: AKADEMİK YAŞANTI

A: Akademik Motivasyon

Yönerge: *Aşağıdaki 15 ifade, lisansüstü öğrencilerini çalışmalarında çaba sarfetmeye motive edebilecek sebeplere karşılık gelmektedir. Her bir ifadenin yüksek lisans/doktora çalışmalarınızda çaba sarfetme nedenlerinizle ne ölçüde örtüştüğünü ilgili rakamı işaretleyerek belirtiniz.*

Neden yüksek lisans/doktora çalışmalarınız için çaba sarfediyorsunuz?	Hiç örtüşmüyor	Biraz örtüşüyor	Orta derecede örtüşüyor	Çok örtüşüyor	Tamamıyla örtüşüyor
Çalışma projemi (örn. tez) başarıyla tamamladığımda hissettiğim zevk için.	1	2	3	4	5
Çünkü pes eden biri olarak algılanmak istemem.	1	2	3	4	5
Çünkü yüksek lisans/doktora çalışmalarım benim değerlerimle (örn. merak, hırs, başarı, vb.) tutarlıdır.	1	2	3	4	5
Mezuniyetten sonra daha iyi maaşlı bir iş edinmek için.	1	2	3	4	5
Çünkü çalışma alanımdaki bilgileri geliştirmek benim için önemlidir.	1	2	3	4	5

B: Programdaki Dersler

Yönerge: *Lütfen bu bölümdeki soruları cevaplarken, şu anda devam ettiğiniz programdaki (yüksek lisans veya doktora) dersleri düşünün. Görüşünüzü ilgili rakamı işaretleyerek belirtiniz.*

	Kesinlikle katılmıyorum					Tamamen katılıyorum
Aldığım dersler alanımdaki yeterliğimi arttırıyor/arttırdı.	1	2	3	4	5	6

Aldığım dersler geleceğe yönelik ihtiyaçlarımı karşılıyor/karşıladı.	1	2	3	4	5	6
Aldığım dersler bağımsız araştırma yapabilmem için iyi bir temel oluşturuyor/oluşturdu.	1	2	3	4	5	6

C: Tez Danışmanıyla Olan İlişkiler

Yönerge: *Lütfen bu bölümdeki soruları cevaplarken, şu anda devam ettiğiniz programdaki (yüksek lisans veya doktora) tez danışmanınızı düşünün. Eğer tez danışmanı henüz atanmadıysa, lütfen bir sonraki bölüme geçiniz.*

	Kesinlikle katılmıyorum		Ne katılıyorum ne katılmıyorum		Kesinlikle katılıyorum
Danışmanım ile görüşmelerimizde entelektüel açıdan "kayıp" hissederim.	1	2	3	4	5
Danışmanım çalışmalarım hakkında yorum yaparken kibar değildir.	1	2	3	4	5
Beraber yaptığımız çalışmalarda danışmanımın bana saygı duyduğunu hissetmem.	1	2	3	4	5

D: Kendine güven

Yönerge: *Aşağıda verilen her bir beceride kendinize ne kadar güvendiğinizi lütfen ilgili rakamı işaretleyerek belirtiniz.*

Aşağıdakileri beceriler konusunda kendime güveniyorum:	Kesinlikle katılmıyorum						Kesinlikle katılıyorum
Tez konusu seçmek	1	2	3	4	5	6	7
Kapsamlı bir alan yazın taraması yapmak	1	2	3	4	5	6	7
Alan yazın tarama makalesi yazma	1	2	3	4	5	6	7

Çalışmamıza katıldığınız için teşekkür ederiz.

D. CONSENT FORM

Araştımaya Katılma Daveti ve Gönüllü Katılım Formu

Bu araştırma, ODTÜ Eğitim Bilimleri Bölümü Yüksek Lisans öğrencisi Ekin Bayar tarafından Doç. Dr. Yeşim Çapa Aydın danışmanlığındaki yüksek lisans tezi kapsamında yürütülmektedir. Bu form sizi araştırma koşulları hakkında bilgilendirmek için hazırlanmıştır.

Çalışmanın amacı nedir?

Araştırmanın amacı lisansüstü eğitimde öğrencilerin tez danışmanlarıyla olan ilişkileri, program memnuniyetleri, akademik motivasyonları ve özyeterlikleri arasındaki muhtemel ilişkiyi saptamak ve dolaylı olarak lisansüstü deneyimin iyileştirilmesine katkıda bulunmaktır.

Bize Nasıl Yardımcı Olmanızı İsteyeceğiz?

Araştırmaya katılmayı kabul ederseniz, sizden bireysel olarak bir demografik bilgi formu doldurmanız ve toplamda 62 Likert tipi sorunun bulunduğu dört anket yanıtlamanız beklenmektedir.

Sizden Topladığımız Bilgileri Nasıl Kullanacağız?

Araştırmaya katılımınız tamamen gönüllülük temelinde olmalıdır. Ankette, sizden kimlik veya kurum belirleyici hiçbir bilgi istenmemektedir. Cevaplarınız tamamıyla gizli tutulacak, sadece araştırmacılar tarafından değerlendirilecektir. Katılımcılardan elde edilecek bilgiler toplu halde değerlendirilecek ve bilimsel yayımlarda kullanılacaktır. Sağladığınız veriler gönüllü katılım formlarında toplanan kimlik bilgileri ile eşleştirilmeyecektir.

Katılımınızla ilgili bilmeniz gerekenler: Ölçekler, genel olarak kişisel rahatsızlık verecek sorular veya uygulamalar içermemektedir. Ancak, katılım sırasında sorulardan ya da herhangi başka bir nedenden ötürü kendinizi rahatsız hissederseniz

çalıştayı yarıda bırakıp çıkmakta serbestsiniz. Böyle bir durumda çalışmayı uygulayan kişiye çalışmadan çıkmak istediğinizi söylemek ya da internet tarayıcınızdan sayfayı kapatmak yeterli olacaktır.

Araştırmayla ilgili daha fazla bilgi almak isterseniz: Ölçekleri doldurma sonrasında, bu çalışmayla ilgili sorularınız cevaplanacaktır. Bu çalışmaya katıldığınız için şimdiden teşekkür ederiz. Çalışma hakkında daha fazla bilgi almak için Eğitim Bilimleri Bölümü öğretim üyelerinden Doç. Dr. Yeşim Çapa Aydın (E-posta: [redacted]) ya da yüksek lisans öğrencisi Ekin Bayar (E-posta: [redacted] ile iletişim kurabilirsiniz.

Yukarıdaki bilgileri okudum ve bu çalışmaya tamamen gönüllü olarak katılıyorum.

(Formu doldurup imzaladıktan sonra uygulayıcıya geri veriniz).

İsim Soyad Tarih İmza

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E. INVITATION EMAIL SENT FROM THE UNIVERSITIES

Sevgili Lisansüstü Öğrencileri,

Tez araştırması kapsamında, lisansüstü öğrencilerin lisansüstü eğitimdeki deneyimlerini incelemek amacıyla bir anket çalışması yürütmekteyiz. Bu kapsamda geliştirilen anket, aşağıdaki adreste çevrimici olarak sunulmuştur:

https://anket.metu.edu.tr/ındex.php/728495

Cevaplanma süresi ortalama 10 dakika olan ankete katılımınız tamamen gönüllülük esasına dayalıdır ve çalışmanın yapılabilmesi için ODTÜ İnsan Araştırmaları Etik Kurulundan gerekli onay alınmıştır. Ankette, sizden kimlik belirleyici hiçbir bilgi istenmemektedir. Toplanan veriler sadece bilimsel amaçlarla kullanılacaktır. Sorularınız için bizimle iletişime geçebilirsiniz.

İlginiz ve katkılarınız için şimdiden çok teşekkür ederiz.

Ekin Bayar ([redacted])
Doç. Dr. Yeşim Çapa-Aydın ([redacted])
ODTÜ Eğitim Bilimleri Bölümü

F. TESTED MODELS FOR THE MOTIVATION FOR PHD STUDIES (MPHD) SCALE

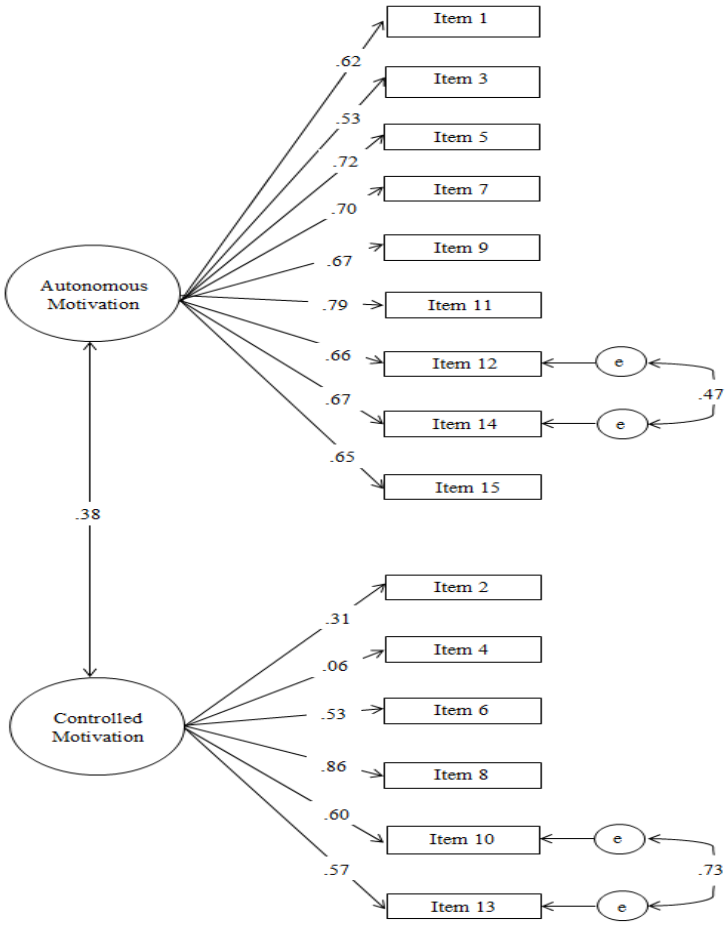

Figure F.1. Factor loadings for the two-factor model

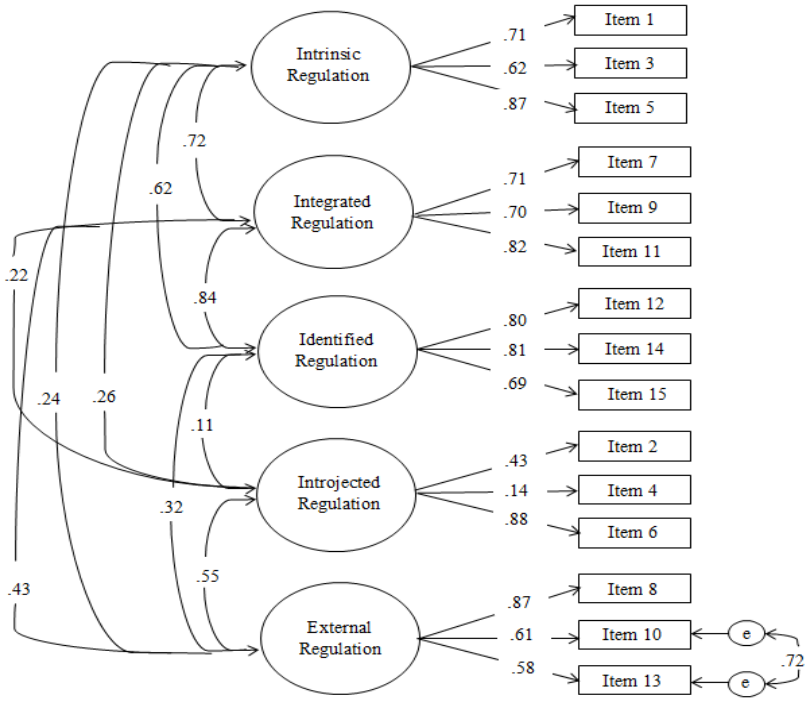

Figure F.2. Factor loadings for the five-factor model

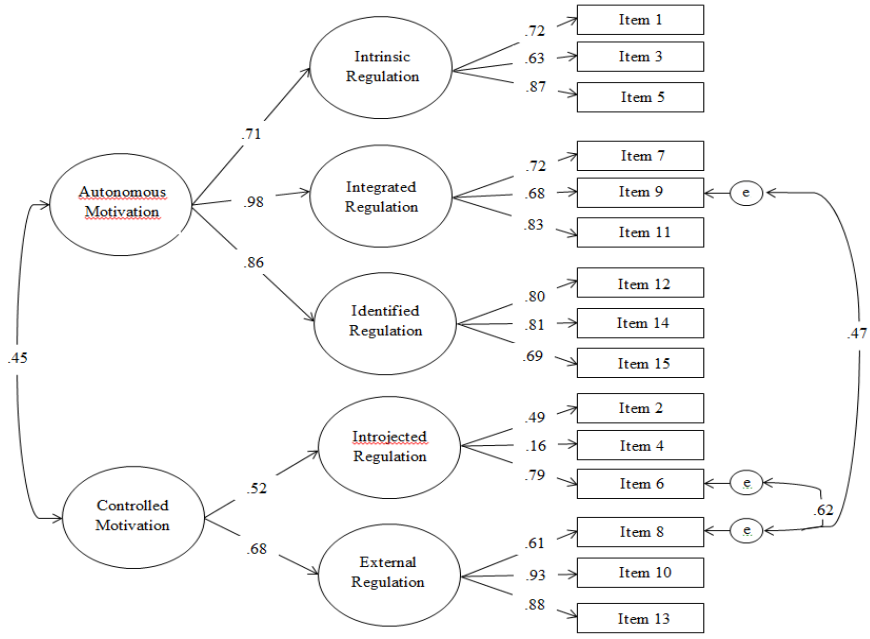

Figure F.3 Factor loadings for the second-order model

G. TURKISH SUMMARY / TÜRKÇE ÖZET

Giriş

Araştırmanın Amacı ve Önemi

Bu çalışmanın amacı, Türkiye'deki devlet üniversitelerindeki Eğitim Bilimleri Enstitüleri ve Sosyal Bilimler Enstitüleri yüksek lisans ve doktora öğrencilerinin lisansüstü eğitim deneyimlerinin incelenmesidir. Daha spesifik olarak, lisansüstü öğrencilerinin araştırma özyeterliklerinin akademik motivasyon, ders memnuniyeti ve danışmanlık ilişkisi ile ne kadar iyi yordandığını incelemek amaçlanmıştır. Ayrıca akademik durum, öğrenim aşaması ve kariyer planının olası etkileri araştırılmıştır.

Son yıllarda dünya çapında (Parker-Jenkins, 2016) ve Türkiye'de (YÖK, n.d.) artan öğrenci sayısı nedeniyle, lisansüstü eğitim alan yazında daha fazla ilgi görmeye başlamıştır. Lisansüstü eğitim konusunda akademik motivasyon (örn., Litalien vd., 2015; Litalien, Lüdtke, Parker ve Trautwein, 2013), ders memnuniyeti (örn. Çapa Aydın vd., 2011; Egbert, 2013), danışman ilişkisi (örn., Gelso vd., 2013; Kahn ve Schlosser, 2010; Solem, Hopwood ve Schlemper, 2011) ve araştırma özyeterliği (örn., Lambie vd., 2014, Lambie ve Vaccaro, 2011; Litalien ve Guay, 2015; Salehi vd., 2013; Sverdlik ve Hall, 2019) ile ilgili birçok çalışma yapılmıştır. Fakat lisansüstü öğrenci sayısı her geçen yıl artsa da (Günay, 2018), yürütülen çalışmalar Türkiye'deki lisansüstü öğrencilerin deneyimlerini açıklamak için henüz yeterli değildir. Ayrıca, danışma ilişkisine yönelik çalışmalar öncelikle psikolojik danışma alanında yürütülmüş ve sonuçlarının genellenebilirliği sınırlanmıştır. Nitel yaklaşım, araştırmacılar tarafından sıklıkla tercih edilmiştir (Sverdlik vd., 2018). Bu çalışmalar, konuların derinlemesine anlaşılmasını sağlasa da, doğası gereği genellemede yetersiz kalmaktadır.

Lisansüstü deneyim, akademisyen yetiştirmenin önemli bir parçasıdır. Konu hakkında yeterli bilgiye sahip olunmaması, kurumların iyi hazırlanmış programlar geliştirmesini ve politikalar oluşturmasını engellemektedir (Goldman ve Goodboy, 2017). Bu çalışmanın amacı, teorik olarak lisansüstü deneyimi etkileyen bazı değişkenleri incelemek, aralarındaki ilişkileri ortaya koymak ve lisansüstü eğitimin iyileştirilmesine yönelik önerilerde bulunmaktır. Örneğin çalışmadan elde edilen danışmanlık ilişkisine ilişkin sonuçlar, danışmanlara ve fakülteye değerli bilgiler sağlayabilir.

Birçok akademisyen, doktora çalışmaları sırasındaki bilimsel faaliyetin, doktora öğrencilerinin profesör olarak gelecekteki araştırma üretkenliğini öngördüğüne inanmaktadır (Barnard-Brak, Saxon ve Johnson, 2011). Araştırmalar, motivasyon (örn., Fernet, Guay ve Senecal, 2004) ve danışmanlık ilişkisi (örn., Gelso vd., 2013) gibi çeşitli değişkenlerin araştırma verimliliği ile ilişkili olduğunu göstermiştir. Üretkenliği etkileyen bu değişkenleri anlamak onu artırmak için önemlidir. Kurumlar, lisansüstü öğrencilerin motivasyonlarını artırarak ve danışmanlık ilişkilerini geliştirerek lisansüstü deneyimlerini iyileştirebilir ve öğrencilerinin verimliliğini artırabilir.

Benzer şekilde lisansüstü öğrencilerin araştırma özyeterliklerinin artırılması da bu noktada büyük önem taşımaktadır. Lisansüstü öğrenciler için, kendi kendine yeterlilik, geliştirilmesi zorunlu bir beceridir (Sinclair vd., 2014; Wellington vd., 2005). Özyeterlik duygusu geliştirmek, çaba ve azim üzerindeki etkisinden dolayı gereklidir (Bandura, 1977; Schunk, 1981). Bandura'nın (1997) özyeterliğin kaynakları konusundaki teorisine uygun olarak, öğrencilere dersler aracılığıyla doğrudan (mastery) ve dolaylı (vicarious) deneyim fırsatları, danışman ilişkileri yoluyla sözlü ikna (verbal persuasion) sağlamak, öğrencilerin özyeterlik duygularını artırabilir. Özyeterlik ve araştırma verimliliği arasındaki ilişki göz önüne alındığında (Lambie vd., 2014; Lambie ve Vaccaro, 2011), özyeterliği artıran faktörlerin incelenmesi de araştırma verimliliği literatürüne katkı sağlayacaktır (Ramsey vd., 2013).

Araştırma Sorusu

Akademik statü, öğrenim aşaması, kariyer planı, akademik motivasyon, ders memnuniyeti ve danışmanlık ilişkisi, lisansüstü öğrencilerin akademik araştırma özyeterliklerini ne kadar iyi yordamaktadır?

Literatür Taraması

Lisansüstü eğitim, bilgi üretme ve geleceğin işgücünü yetiştirmedeki önemi nedeniyle giderek daha fazla çalışılmaktadır. Onu daha iyi anlamak ve değiştirmek için alan yazında birçok yönü incelenmiştir. Yine alan yazında benlikle ilgili terimlerin yükselişi, birçok yeni terimin ortaya çıkmasına neden olmuştur. Morin (2017) terimleri yedi kategoride sınıflandırmıştır ve bunlardan biri özyeterlik terimini içeren benlik görüşleridir. Kendine güven (self-assurance), özgüven (self-confidence), kendine inanç (self-belief), benlik saygısı (self-esteem), etki motivasyonu (effectance motivation), algılanan kontrol (perceived control) ve özyeterlik. İlgili olmasına rağmen, özyeterlik bunlarla eş anlamlı değildir. Özyeterlik, bir bireyin istenen bir amaç veya hedeflere ulaşmak ve öğrenmek için algılanan yeterliği (Schunk ve Pajares, 2009) ve belirlenmiş performans türlerini elde etmek için gerekli olan eylemleri organize etme ve yürütme yeteneklerine ilişkin yargısı olarak tanımlanır (Bandura, 1986). Bandura (1997), özyeterlik inancının dört kaynağını şöyle sıralamıştır: doğrudan deneyimler (mastery experience), dolaylı deneyimler (vicarious experience), sözel ikna (verbal persuasion) ve fizyolojik ve duygusal durumlar (physiological and affective states). Bireye ve bağlama dayalı olarak, dört kaynak farklı oranlarda kişinin yargısını etkileyebilir.

Özyeterlik pek çok bağlamda deneyimlenebilir ve incelenebilir ve bunlardan biri araştırma özyeterliğidir. Araştırma özyeterliği, bir araştırma tasarımı belirleme, tez yazma gibi araştırma yürütme ile bağlantılı görevleri başarıyla yerine getirme konusunda kişinin kendine inancını ifade eder (Morrison ve Lent, 2014). Araştırma özyeterliği doğası gereği, genellikle bağımsız araştırmacı olmaya geçiş yapan lisansüstü öğrencilerle ilgilidir. Sadece son on yılın araştırması, araştırma özyeterliği ile motivasyon (örn. Salehi vd., 2013), danışmanlık ilişkisi (örn. Kuo, Woo ve Bang, 2017), ilgi (örn. Lambie ve Vaccaro, 2011), araştırma kaygısı ve

tutum (örn. Rezaei ve Zamani-Miandashti, 2013), üretkenlik ve benlik saygısı (örn. Odacı, 2013) ve daha fazlası arasındaki ilişkiyi göstermiştir.

Motivasyon, bireyi istenen hedeflere ulaşmak için belirli bir davranışta bulunmaya yönlendiren bilişsel süreçtir (Deci ve Ryan, 2000). Freud'un davranışımızın kaynağının içgüdümüz veya dürtümüz olarak tanımlanması, araştırmacılara öncelikle bu içgüdüsel motivasyon üzerinde çalışmak için ilham verdi, ancak bu tanım insan eyleminin çoğunu açıklamakta başarısız oldu (Hegarty, 2011). Sonraki yıllarda odağın "çevreye tepki verme"den "bilişsel süreçlere" kayması bireylerin toplumla etkileşimine ilişkin gözlemsel çalışmaları teşvik etti (Hegarty, 2011). Motivasyon yaygın olarak bir ikilem olarak kabul edilmektedir. Aktivitenin kendisi dışında görünürde bir ödülü olmayan bir aktiviteyi gerçekleştirmek içsel motivasyon olarak adlandırılırken (Litalien vd., 2015), bir aktiviteyi statü veya onay gibi dışsal ödüllere yol açtığı için gerçekleştirmek dışsal motivasyon olarak adlandırılır. Eğitim bağlamında motivasyonun gerekli karmaşıklığını sağlayan bir teori, insan davranışını düzenleyen çeşitli motivasyon türleri öneren Ryan ve Deci'nin (2012) kendi kaderini tayin teorisidir (SDT). SDT'de motivasyonu iki kategoriye ayırır ve buna motivasyonsuzluğu ekler. Ayrıca dışsal motivasyonu daha da detaylandırır ve daha karmaşık bir motivasyon teorisi oluşturur. Dışsal motivasyon, sırasıyla düşükten yükseğe kendi kaderini tayin hakkına sahip dört tür düzenlemeyi içerir: dış düzenleme (external), içe yansıtılan düzenleme (introjected), belirlenmiş düzenleme (identified) ve entegre düzenleme (integrated) (Deci ve Ryan, 1985, 2012). SDT iki daha geniş motivasyon kategorisi sunar: otonom (autonomous) (içsel, entegre ve belirlenmiş) ve kontrollü (controlled) (dış ve içe yansıtılan) (Litalien vd., 2015). Alan yazında motivasyonu yüksek olan lisansüstü öğrencilerinin araştırma özyeterliğinin de yüksek olduğu görülmüştür (Salehi, Kareshki ve Ahanchian, 2013). Otonom motivasyon ile algılanan yetkinlik arasında bulunan pozitif korelasyon ve kontrollü motivasyon ile algılanan yetkinlik arasındaki negatif korelasyon (Litalien ve Guay, 2015), araştırma özyeterliği ile otonom motivasyon arasında pozitif bir korelasyon ve kontrollü motivasyon arasında negatif bir korelasyon anlamına gelebilir.

Öğrenci memnuniyeti, bir öğrencinin eğitim deneyimine ilişkin algısını ve bununla ilgili memnuniyetlerini yansıtır (Astin, 1993). Eğitim kalitesinin önemli bir göstergesi olarak kabul edilir (Domenech-Betoret, Abellan-Rosello ve Gomez-Artiga, 2017), bu nedenle lisansüstü eğitimi değiştirmek için de çalışılmalıdır. Daha spesifik bir türü olarak ders memnuniyeti öğrencilerin katılmış oldukları dersle/derslerle ilgili memnuniyetlerine ilişkin değerlendirmesidir (Strachota, 2003). Literatürde akademik doyum (örn. Çapa-Aydın vd., 2011), araştırma ve öğretmeye ilgi ve kariyer seçimi (örn. Meyers vd., 2000) ile ilişkisi gösterilmiştir. Lisansüstü öğrencilerin araştırma özyeterliği ile ders memnuniyeti ilişkisine ilişkin bir çalışma bulunamamasına rağmen, ders memnuniyeti ile özyeterlik arasındaki ilişki (Egbert, 2013), aralarında olası bir pozitif ilişkiye de işaret etmektedir.

Danışmanlık ilişkisi bir lisansüstü öğrenci ile öğrencinin program aracılığıyla gelişimini kolaylaştırmaktan sorumlu olan öğretim üyesi arasındaki ilişkiyi ifade eder ve olumlu veya olumsuz bir ilişki olabilir (Schlosser ve Gelso, 2001). Danışman, fakülte ile kilit irtibat kişisidir ve teknik rehberlik sağlar ve bir program aracılığıyla öğrencinin ilerlemesine rehberlik eder (Weil, 2001). Lisansüstü eğitimde sosyal destek son derece önemlidir ve akademik destek de bunun bir parçasıdır ki bu da öğrencilerin araştırma özyeterliklerini etkiler (Niehaus, Garcia, ve Reading, 2018). Danışmanları ile iyi bir ilişkisi olan lisansüstü öğrenciler, yüksek araştırma özyeterliğine sahip olma eğilimindedir (Morrison ve Lent, 2014).

Sonuç olarak, araştırma özyeterliği, akademik motivasyon, ders memnuniyeti ve danışmanlık ilişkisi literatürde sıklıkla incelenen dört değişkendir. Lisansüstü eğitimdeki önemlerine ve bağlantılı olmalarına rağmen, lisansüstü eğitim bağlamında yeterince vurgulanmamıştır. Ayrıca daha önceki çalışmalarda dördü bir model olarak incelenmemiştir. Bu nedenle, bu çalışma, lisansüstü öğrencilerin akademik motivasyonu, ders doyumu ve danışmanlık ilişkisinin araştırma özyeterlikleri üzerindeki yordayıcı etkisini araştırmayı amaçlamıştır.

Yöntem

Desen

Bu çalışma, nicel bir araştırma desenini takip etmektedir. Değişkenler arasındaki ilişkileri anlamak için bu çalışmada ilişkisel araştırma yöntemi kullanılmıştır.

Örneklem

Türkiye'de devlet üniversitelerinin Sosyal Bilimler Enstitüsü ve Eğitim Bilimleri Enstitüsü'nde öğrenim gören yüksek lisans ve doktora öğrencileri bu araştırmanın hedef kitlesini oluşturmuştur. Erişilebilir popülasyon, Türkiye'de üç devlet üniversitesinde (Ankara Üniversitesi, Boğaziçi Üniversitesi ve Orta Doğu Teknik Üniversitesi) Sosyal Bilimler Enstitüsü veya Eğitim Bilimleri Enstitüsü'nde öğrenim gören 11758 lisansüstü öğrenci olarak belirlenmiştir. Veriler 403 gönüllü lisansüstü öğrencisinden toplanmıştır. Katılımcıların %50,7'si yüksek lisans öğrencisi iken, %48,8'i doktora öğrencisidir ve %2'si akademik durumunu belirtmemiştir. Katılımcıların %34,7'si ders aşamasında, %64,6'sı tez aşamasındadır. Son olarak, katılımcıların %66,8'i akademik kariyer yapmayı planlarken, %15,3'ü akademik olmayan bir kariyer yapmayı planlamaktadır ve %15,3'ü gelecekteki kariyerleri hakkında kararsızdır.

Veri Toplama Araçları

Uygulanan aracın ilk bölümünde katılımcılara cinsiyetleri, doğum tarihleri, medeni durumları, sınıf düzeyleri, üniversite ve bölümleri, hangi dönemde oldukları, genel akademik not ortalamaları, af durumları, çalışma durumları ve kariyer planları sorulmuştur. İkinci bölümde dört alt bölüm bulunmaktadır: Doktora Çalışmaları için Motivasyon (MPhD) Ölçeği, Ders Memnuniyeti Ölçeği, Danışmanlık Çalışma Birliği Öğrenci Ölçeği - Uyum Alt Ölçeği (AWAI-S-Rapport) ve Araştırma Özyeterlik Ölçeği. Bu dört ölçek arasında, Doktora Çalışmaları için Motivasyon (MPhD) Ölçeği, AWAI-S ve Araştırma Özyeterlik Ölçeği, geliştiricilerden izin alınarak Türkçe'ye uyarlanmıştır. İlk olarak, üç İngiliz Dili Eğitimi (ELT) mezunu ölçekleri İngilizce'den Türkçe'ye çevirmiştir. Çeviriler araştırmacılar tarafından gözden geçirilmiş, farklılıklar dışarıdan bir uzmanla tartışılmış ve üzerinde mutabakata varılmış Türkçe bir taslak geliştirilmiştir. Bu

taslak, orijinal ölçeği bilmeyen üç farklı ELT mezunu tarafından geri çevrilmiştir. Çeviriler araştırmacılar tarafından karşılaştırıldıktan sonra gerekli düzeltmeler yapılmış ve ölçeklere son halleri verilmiştir. Son olarak bir lisansüstü öğrencisi tarafından anlaşılırlık açısından incelenmiştir.

Litalien, Guay ve Morin (2015), doktora motivasyonunu değerlendirmek için SDT tabanlı bir ölçek – Doktora Çalışmaları için Motivasyon Ölçeği – geliştirmiştir. Bu ölçek, 1'den (Hiç uymuyor) 5'e (Tam olarak uyuyor) 15 maddeye sahiptir. Beş alt boyutu vardır: İçsel (3 madde), Entegre (3 madde), Belirlenmiş (3 madde), İçe Yansıtılan (3 madde) ve Dış Düzenleme (3 madde). Bu faktörler Otonom ve Kontrollü Motivasyon'a dahildir. Pilot verisi kullanılarak yapılan açıklayıcı faktör analizinde (AFA), faktör sayısı iki ile sınırlandırıldığında iki faktörlü yapıyı -otonom ve kontrollü motivasyon- beklenen şekilde göstermiştir. Otonom motivasyon ve kontrollü motivasyon için Cronbach alfa katsayıları sırasıyla .81 ve .73 olarak hesaplanmıştır. Pilot çalışma bulgularına göre 4. ve 7. maddesinin ifadeleri değiştirilmiştir. Ölçeğin faktör yapısını araştırmak için ana verilere doğrulayıcı faktör analizi (DFA) uygulanmıştır. Uyum indeksleri, özellikle CFI ve TLI, beş faktörlü ve ikinci dereceden CFA'lar için kabul edilebilir aralıkta olmasına rağmen, RMSEA orta düzeyde bir uyumu gösterir. Öte yandan, 4. maddenin faktör yükü tüm modellerde düşük çıkmıştır. Bu nedenle, 4. maddenin yer aldığı "İçe Yansıtılan Düzenleme" çalışma kapsamından çıkarılmıştır. İki boyutlu yapi için, uyum indeksleri CFI için .94, TLI için .92 ve RMSEA için .09 olarak hesaplanmıştır. Otonom motivasyon için güvenirlik .84, kontrollü motivasyon için .80 olarak hesaplanmıştır.

Çapa Aydın vd. (2011) lisansüstü öğrencilerin akademik memnuniyetleriyle ilgili faktörleri değerlendirmek için Akademik Yaşam Ölçeği'ni geliştirmiştir. Bu çalışmada ölçeğin altı maddelik ders memnuniyeti alt boyutu kullanılmıştır. Maddeler 6'lı Likert tipidir (1 "kesinlikle katılmıyorum" ile 6 "kesinlikle katılıyorum" arasında). Pilot verisi kullanılarak yapılan AFA, Ders Memnuniyeti Ölçeği'nin tek faktörlü yapısını sergilemiştir. Cronbach alfa değeri .91 olarak hesaplanmıştır. Yine ana veriyle yapılan DFA sonucunda, uyum indeksleri CFI .99,

TLI .98 ve RMSEA .06 olarak hesaplanmış ve tek boyutlu yapı doğrulanmıştır. Cronbach alfa değeri .89 olarak hesaplanmıştır.

Sclosser ve Gelso (2001) lisansüstü öğrencilerinin danışmanlarıyla çalışma ittifaklarına ilişkin algılarını değerlendirmelerine olanak tanıyan Danışmanlık Çalışma Birliği Envanteri'ni – Öğrenci (AWAI-S) geliştirmiştir. AWAI-S, 1'den (kesinlikle katılmıyorum) 5'e (kesinlikle katılıyorum) toplam 30 maddeye sahiptir. 16 madde olumsuz ifade edilmiştir. Uyum (11 madde), Çıraklık (14 madde) ve Özdeşleşme-Bireyleşme (5 madde) olmak üzere üç alt ölçek bulunmaktadır. Pilot çalışma bulguları ışığında, sadece Uyum alt boyutunun kullanılmasına karar verilmiştir. Uygulanan DFA'da CFI .96, TLI .95 ve RMSEA .06 olarak hesaplanmış ve bir boyutlu yapı dogrulanmıştır. Cronbach alfa ise .89 olarak hesaplanmıştır.

Lisansüstü öğrencilerin araştırma özyeterliklerini değerlendirmek için Özyeterlik Ölçeği (Sverdlik ve Hall, 2019) kullanılmıştır. Sverdlik ve Hall (2019), katılımcıların çeşitli lisansüstü okul görevlerini başarıyla tamamlama konusunda algıladıkları güveni değerlendirmek için 11 maddelik bir özyeterlik ölçeği geliştirmiştir. Ölçek, 7 puanlık bir derecelendirme ölçeği kullanmaktadır (1 "kesinlikle katılmıyorum" ile 7 "kesinlikle katılıyorum"). Pilot verisi kullanılarak yapılan AFA, Özyeterlik Ölçeği'nin tek faktörlü yapısını göstermiştir. Cronbach alfa değeri .88 olarak hesaplanmıştır. Yine ana veriyle yapılan DFA sonucunda, tek faktörlü yapı için uyum indeksleri CFI .95, TLI .93 ve RMSEA .07 olarak hesaplanmıştır. Cronbach alfa ise .89 olarak bulunmuştur.

Veri Toplama Süreci

ODTÜ Anket Hizmeti kullanılarak anketin çevrimiçi versiyonu oluşturulmuştur. Daha sonra kullanılacak araç ve onam formunu içeren bir başvuru ODTÜ İnsan Araştırmaları Etik Kurulu'na sunulmuştur. Sunulan çalışma, Ocak 2020'de kurul tarafından onaylamıştır.

Veri toplama süreci pilot ve ana çalışma olmak üzere iki aşamada gerçekleştirilmiştir. Birinci aşama için 2019-2020 eğitim öğretim yılında iki üniversitenin 336 lisansüstü öğrencisinden veri toplanmıştır. İkinci aşamada, 2020-2021 eğitim öğretim yılının ilk döneminde üç üniversitenin 403 lisansüstü

öğrencisinden veri toplanmıştır. Her iki aşama için söz konusu üniversitelerin Sosyal Bilimler ve/veya Eğitim Bilimleri Enstitüsü'nden araştırma izni alınmıştır. Başlangıçta veri toplamanın hem çevrimiçi, anket hem de yüz yüze yapılması planlanmıştır. Ancak COVID-19 nedeniyle Türkiye'deki tüm üniversiteler uzaktan eğitime geçmiş, bu nedenle, veriler yalnızca çevrimiçi anket yoluyla toplanmıştır. İki üniversitede Enstitü'ye bağlı bir programa kayıtlı lisansüstü öğrencilere Enstitü, anket bağlantısını, çalışmanın bir açıklamasını ve gizliliğin ve anonimliğin nasıl sağlanacağına ilişkin bilgileri içeren bir e-posta göndermiştir. Bir üniversitede ise, Enstitü çalışma açıklamasını ve anket bağlantısını resmi web sayfalarında yayınlamıştır. Lisansüstü öğrencilere hatırlatma duyurusu gönderilememiştir. Bu nedenle, yanıt oranını artırmak için araştırma görevlilerinin e-posta adresleri üniversitelerin resmi web sitelerinden elde edilmiş, bu öğrencilere de anket daveti gönderilmiştir. Gönüllü katılımcılar soruları yaklaşık 10 dakikada yanıtlamıştır.

Veri Analizi

Veri toplama işlemi tamamlandıktan sonra veriler ODTÜ Anket Servisi'nden .xls formatında indirilmiştir. Uygun olmayan veriler silinmiştir. Veri analizi, Mplus 8 ve IBM SPSS 26 kullanılarak yapılmıştır.

İlk olarak, DFA için uyum indekslerinden şunlar kullanılmıştır: $\chi 2$, CFI, TLI ve RMSEA. CFI ve TLI orta düzeyde bir model uyumu için .90'dan büyük ve iyi bir model uyumu için .95'ten büyük olmalıdır (Hu ve Bentler, 1999). RMSEA ise mutlak bir uyum indeksidir ve önerilen model ile elde edilen kovaryans matrisleri arasındaki uyuşmazlığı araştırır (Byrne, 2009). İyi bir model uyumu .05'ten küçük bir değer gerektirirken, orta düzeyde bir model uyumu .05 ile .08 arasında bir değer gerektirir (Browne ve Cudeck, 1993). Ayrıca her bir ölçeğin iç tutarlılığı Cronbach alfa katsayısı ile incelenmiştir.

Katılımcıların demografik özelliklerini tanımlamak için ortalama değerler, standart sapmalar, yüzdeler ve frekans değerlerinin kullanıldığı betimsel istatistikler oluşturulmuştur. Araştırma sorusunu cevaplamak için, hiyerarşik çoklu regresyon analizi yapılmıştır. Bağımlı değişkeni sürekli bir değişken olan araştırma özyeterliğidir. Bağımsız değişkenler hiyerarşik regresyon analizine önceden belirlenen sıra ile eklenmiştir. Bu sıra, Tabachnick ve Fidell'in (2019) önerdiği gibi

değişkenlerin önemine göre belirlenmiştir. İlk adımda akademik durum, öğrenim aşaması ve kariyer planı, ikinci adımda otonom ve kontrollü motivasyon, son adımda ise teorik olarak daha önemli oldukları için ders memnuniyeti ve danışmanlık ilişkisi modele eklenmiştir. Akademik durum, öğrenim aşaması ve kariyer planı kategorik iken, akademik motivasyon, ders memnuniyeti ve danışmanlık ilişkisi süreklidir. Araştırmanın akademik durumu ve öğrenim aşaması iki düzeyli olup herhangi bir kodlama işlemi gerektirmezken, kariyer planı üç düzeyli olup "kararsız" kategorisi referans olarak kullanılmıştır.

Araştırmanın Sınırlılıkları

İlk sınırlılık, çalışmada sadece özbildirim veri toplama araçları kullanılmasından doğmaktadır. Katılımcılar, sosyal beğenirlik kaygısı nedeniyle farklı yanıtlar verebilirler. Bu etkiyi önlemek veya azaltmak için, katılımcılara yanıtlarının anonim olacağı ve herhangi bir tanımlayıcı bilgi çıkarıldıktan sonra verilerin analiz edileceği konusunda bilgi verilmiştir.

İkincisi, çalışma Sosyal Bilimler ve Eğitim Bilimleri Enstitüleri lisansüstü öğrencileri ile sınırlıdır. Bu nedenle bulguların diğer kurumlara veya enstitülere genellenmesi mümkün olmayacaktır. Ayrıca katılımcılar Ankara ve İstanbul'da bulunan üç devlet üniversitesindendir. Farklı şehir veya üniversitelerin farklı öğrenci profilleri nedeniyle çalışmanın ekolojik olarak genellenebilirliği de kısıtlanmıştır.

Üçüncüsü, korelasyonel çalışmanın doğası gereği, değişkenler arasında bir neden-sonuç ilişkisi çıkarılamamaktadır.

Bulgular

Betimsel analiz sonuçlarına göre yüksek lisans öğrencilerinin otonom motivasyon ortalama değeri ölçeğin nispeten yüksek ucunda yer alırken, kontrollü motivasyon ortalama değeri orta noktaya daha yakındır. Ders memnuniyetleri ve araştırma özyeterlikleri orta ile yüksek arasındadır. Akademik danışmanlık ilişkileri ortalamaları ise derecelendirmede yüksek tarafta yer almıştır. Her bir bağımsız değişkenin bağımlı değişken üzerindeki rolü açısından, en yüksek korelasyon otonom motivasyon ile ortaya çıkarken, en küçük ve anlamlı olmayan korelasyon ise kontrollü motivasyon ile ortaya çıkmıştır.

Üç aşamalı hiyerarşik regresyon analizi sonuçları, özyeterlik konusunda akademik durum ve öğrenim aşamasının yordayıcı olmadığını, kariyer planının ise yordayıcı olduğunu göstermiştir. Akademik olmayan bir kariyer planlayan ve kariyer konusunda kararsız olan lisansüstü öğrencileri, akademik kariyer planı olan lisansüstü öğrencilere göre anlamlı düzeyde daha az araştırma özyeterliğine sahiptir. Kodlanan değişkenler, araştırma özyeterliğindeki varyansın %2 ve %3'ünü açıklamıştır. Lisansüstü öğrencilerin hem otonom hem de kontrollü motivasyonu, araştırma özyeterliklerine istatistiksel olarak önemli ölçüde katkıda bulunmuştur. Beklendiği gibi, otonom motivasyon, araştırma özyeterliği ile pozitif bir şekilde ilişkiliyken, kontrollü motivasyon bununla negatif olarak ilişkilidir. Otonom motivasyon, araştırma özyeterliğindeki varyansın %20'sini açıklayan en belirgin yordayıcıdır. Son olarak, hem ders memnuniyeti hem de danışmanlık ilişkisinin pozitif olark yordayıcı olduğu görülmüş ve varyansın %2 ve %4'ünü açıklamıştır. İlk model araştırma özyeterliğindeki varyansın %6,5'ini, ikinci model %19,7'sini ve üçüncü model %7,9'unu açıklamıştır. Model, toplamda varyansın %34,2'si açıklamıştır.

Sonuç ve Öneriler

Mevcut çalışmanın bulguları, Türkiye'de üç üniversitenin Sosyal Bilimler Enstitüsü ve Eğitim Bilimleri Enstitüsü lisansüstü öğrencilerinin akademik statüleri, öğrenim aşamaları, kariyer planları, akademik motivasyonları, ders memnuniyetleri ve danışmanlık ilişkilerinin araştırma özyeterliklerindeki rollerini aydınlatmıştır. Çalışma, bir lisansüstü öğrenme ortamının farklı yönlerinin birbiriyle ilişkisini vurgulamış ve lisansüstü öğrencilerin araştırma özyeterlik inançları konusunu aydınlatmayı amaçlamıştır. Özyeterliğin geliştirilmesi öğrenciye, fakülteye, kuruma, ülkeye ve dünyaya faydalı olacaktır.

Otonom motivasyon araştırma özyeterliğini olumlu, kontrollü motivasyon ise olumsuz olarak yordamıştır. Bu bulgu, ilgileri, zevkleri, kişisel hedefleri doğrultusunda veya yapılan şeyin önemli olduğunu düşündükleri için motive olan öğrencilerin yüksek araştırma özyeterliğine sahip oldukları anlamına gelirken, bir ödül kazanmak veya ceza almaktan kaçınmakla motive olan öğrencilerin düşük araştırma özyeterliğine sahip oldukları anlamına gelir. Bu sonuçlar, algılanan

yetkinlik ile iki tür motivasyon arasındaki ilişki üzerine yapılan önceki araştırmalarla tutarlıdır (Litalien ve Guay, 2015). Araştırma özyeterliği ve algılanan yetkinlik tam olarak aynı olmasa da, benzer şekilde ölçülürler.

Danışmanlık ilişkisi, daha önceki araştırmaların bulgularını güçlendirecek şekilde (Morrison ve Lent, 2014) araştırma özyeterliğini olumlu yönde yordamıştır. Bu bulgu Bandura'nın (1997) teorisiyle uyumludur. Özyeterlik kaynağı olarak sözlü ikna, danışman ilişkisi yoluyla deneyimlenebilir. Danışmanların sözleri ve destekleri, kendilerine güvenildiği için öğrencilerin özyeterliklerini kolaylaştırma veya engellemede daha etkili olabilir (Usher ve Pajares, 2008). Danışmanlık ilişkisini bir mentörlük olarak deneyimlemek ve ilişkide olumlu bir rol model tarafından onurlandırılmak, desteklenmek, teşvik edilmek ve yönlendirilmek, öğrencilerin bu ilişkiden memnun olmasını sağlar (Schlosser vd., 2003). İlişkide ihmal edildiğini hisseden öğrenciler, sadece bundan memnun olmamakla kalmaz, aynı zamanda daha az özyeterliğe deneyimler. Dolayısıyla tatmin edici bir danışma ilişkisine sahip olmak, diğer bir deyişle psikolojik olarak olgun olmak (Goldman ve Goodboy, 2017), dürüst ve yardımsever olmak (Sverdlik vd., 2018), ilişkiye ilişkin sözlü ve yazılı kurallara sahip olmak ve gerektiğinde bunları revize etmek (Parker-Jenkins, 2018), düzenli olarak buluşmak, paralel iletişim tarzlarına ve ihtiyaçlara sahip olmak ve geri bildirim vermeye ve almaya açık olmak (Sverdlik vd., 2018) lisansüstü öğrencilerin özyeterliklerini artırmada faydalı olabilir.

Ders memnuniyeti daha yüksek bir araştırma özyeterliğine katkıda bulunmuştur. Literatürde lisansüstü öğrencilerin araştırma ders memnuniyeti ve özyeterliği için bir araştırma olmamasına rağmen, ders memnuniyeti ve özyeterlik arasındaki ilişkiyi gösteren çalışmalar (Egbert, 2013), yeterlik duygusunu geliştirmek için başarılı ders deneyiminin önemine işaret etmektedir. Ölçeğin bazı maddeleri Bandura (1997) tarafından önerilen en güçlü kaynak olan doğrudan deneyimine karşılık gelmektedir. Öğrencilere seviyelerine uygun doğrudan deneyim kazanabilecekleri derslerin sunulması özyeterliklerinin artmasında yardımcı olabilir.

Birinci adımda regresyon denklemine lisansüstü öğrencilerin akademik durumu, öğrenim aşaması ve kariyer planı kombinasyonu kontrol değişkenleri olarak girilmiştir. Literatürde araştırma özyeterlikleri esas olarak doktora

öğrencileri ile çalışılmıştır (örn. Lambie ve Vaccaro, 2011) ve yüksek lisans öğrencileri ile veya yüksek lisans ve doktora öğrencilerinin karşılaştırıldığı çok fazla araştırma yoktur. Bazı çalışmalarca yüksek lisans ve doktora öğrencilerinin özyeterlikleri arasında anlamlı bir fark bulunmuştur (Odacı, 2013; Rezaei ve Zamani-Miandashti, 2013). Benzer şekilde, literatürde farklı aşamalardaki öğrenciler arasında da (Sverdlik ve Hall, 2020) anlamlı bir fark bulunmuştur. Ancak, bu çalışmada araştırma özyeterliği ne akademik statüye ne de öğrenim aşamasına göre farklılık göstermiştir. Öte yandan, kariyer planı konusunda önemli bir fark tespit edilmiştir. Sonuçlar, akademisyen olmayı planlayan öğrencilerin araştırma özyeterliğinin, akademik olmayan bir kariyer planlayan veya kararsız olanlarınkinden daha fazla olduğunu göstermiştir.

Mevcut çalışmanın sonuçlarına dayanarak, lisansüstü öğrencilerin araştırma özyeterliğini geliştirmek için çeşitli önerilerde bulunulabilir. Öğrencilerin araştırma çıktıları sadece onlara ait olmamalıdır (Lambie ve Vaccaro, 2011). Hedeflerinden ve beklentilerinden emin olamayan, çok az araştırma deneyimi olan veya hiç deneyimi olmayan öğrenciler vardır. Fakülte, öğrencilerin ihtiyaç ve beklentilerini karşılamak için proaktif olarak öğrencilerle birlikte çalışmalıdır (Kuo vd., 2017). İlk olarak, hem daha önceki araştırmalar hem de bu araştırma, kontrollü motivasyona göre otonom motivasyonun önceliğini göstermiştir (Deci ve Ryan, 2008). Lisansüstü programlar, araştırma sürecinde dışsal ödülleri sınırlamalı ve içsel motivasyonu teşvik etmelidir (Kuo ve diğerleri, 2017) ki bu öğrencilerin araştırma özyeterliğini artıracaktır.

İkincisi, bir programın derslerini oluştururken ve bu dersleri aktarırken, öğrencilerin ihtiyaç ve beklentilerini karşılamak ihmal edilmemelidir. Dersler aracılığıyla öğrencilere doğrudan deneyim sağlayan enstitüler, lisansüstü öğrencilerinin araştırma özyeterliklerini de destekleyebilir.

Bu çalışma ayrıca, danışmanlık ilişkisinin araştırma özyeterliği üzerindeki rolünü doğrulamıştır. Dolayısıyla danışmanlık ilişkisini iyileştirmek, araştırma özyeterliğini de artıracaktır. Lisansüstü eğitimin konusu insan olduğundan, danışmanlık ilişkisi planının dinamik ve uyarlanabilir olması gerekir. Danışmanlık ilişkisi, doğası gereği zamanla değişir ve şartları taraflarca tartışılabilir. Asgari

düzeyde bir danışma ilişkisinin bağlama özgü, kurum tarafından geliştirilmiş, karşılıklı sorumluluklar ve saygıya dayalı olması ve sözlü ve yazılı olarak ifade edilmesi gerekmektedir (Gunnarsson, Jonasson ve Billhult, 2013). Danışmanlık ilişkisini planlarken kurumlar, niteliğini göz önünde bulundurmalı ve dönem boyunca ilerlemeyi gözden geçirmelidir.

Önerilerin yanı sıra gelecekteki çalışmalar için olası araştırmaları fikirleri de verilebilir. İlk olarak, bu çalışmayı nitel araştırma ile desteklemek, danışma sürecini incelemeye yardımcı olacak ve diğer araştırma özyeterlik kaynaklarının belirlenmesine olanak tanıyacaktır. İkinci olarak, genellenebilirliği artırmak için, çalışma farklı üniversiteler ve farklı enstitüler gibi farklı popülasyonlarla tekrarlanabilir. Üçüncüsü, lisansüstü öğrencilerin araştırma özyeterliği için daha iyi bir yordama modeli için araştırmaya ilgi gibi farklı değişkenler dahil edilebilir. Ayrıca, burada incelenen ilişkiyi araştırmak için gelecekteki çalışmalarda boylamsal bir tasarım kullanılabilir. Son olarak, Doktora Çalışmaları için Motivasyon Ölçeği ve AWAI-S'nin geçerliğinin tekrar değerlendirilmesi önerilmektedir.

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