Exploring Factors Influencing Doctoral Students' Persistence and Completion: A Qualitative Descriptive Study

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Abstract

Doctoral students often face a range of unforeseen challenges that impede their progress toward academic and personal goals. This study addressed the pressing concern of low doctoral completion rates, which stood at 56.6% in 2021. Guided by self-determination theory (Deci & Ryan, 2008), this qualitative descriptive study explored the factors influencing doctoral student persistence, productivity, and success. In particular, it examined how the core psychological needs of autonomy, competence, and relatedness shape students' academic experiences and trajectories. Data were collected through semi-structured Zoom interviews with 10 diverse participants who completed their doctoral degrees in 2022 and 2023, were fluent in English, and were willing to share their experiences from various disciplines and universities across the United States. Each RQ focused on a distinct aspect of doctoral students' experiences, providing a comprehensive exploration of the factors influencing their persistence, productivity, and success. Participants identified the factors (e.g., personal, financial, time management, support systems) that influenced persistence during different stages of the doctoral journey, and the challenges and motivators vary between academic disciplines (e.g., STEM vs. humanities). Participants also identified the roles of the three components of SDT (autonomy, competence, and relatedness) in shaping persistence, and these roles varied across disciplines and stages of the doctoral journey. This research underscores the significance of targeted interventions, including financial aid, mentorship programs, and mental health resources, in promoting doctoral completion rates and enhancing student well-being. It enriched our understanding of the factors influencing persistence while providing practical insights for academic institutions, policymakers, and researchers seeking to enhance educational outcomes in doctoral programs. Future research should focus on diversifying samples, examining long-term trends, and

investigating how cross-cultural and discipline-specific differences influence the impact of SD factors on persistence, thereby deepening the understanding of doctoral student experiences.

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Chapter 1: Introduction

Both scholars and students have historically viewed doctoral studies as the pinnacle of educational achievement, representing the opportunity to earn the highest academic degree (Charles et al., 2022; De Clercq et al., 2021). However, researchers expressed growing concern about the low completion rates for doctoral students (Ph.D.), which stood at 56% in 2021 (Council of Graduate Schools, 2023). Some researchers, such as Charles et al. (2022), De Clercq et al. (2021), Hurts et al. (2022), and Shin et al. (2021), have noted differences in completion rates among various Ph.D. programs. Particularly, the attrition rates for Doctor of Education (EdD) programs reached as high as 70%, while other doctoral programs reported rates between 40% and 60% (Nettles & Millett, 2006).

For many students, earning a doctoral degree was an aspiration. Nonetheless, numerous internal and external factors frequently obstruct their progress toward this achievement (De Clercq et al., 2021; Charles et al., 2022). Unexpected challenges and hurdles may have prevented students from completing their studies and achieving both academic and personal goals (Lehan et al., 2021; Barbayannis et al., 2022). This predicament not only represented a significant loss of academic talent for universities but also a personal setback for doctoral students (Hurts et al., 2022). Furthermore, educational institutions and research organizations experienced a shortage of qualified personnel due to these losses (Charles et al., 2022).

Numerous factors hindered the completion of doctoral studies, including financial challenges (Shin et al., 2021), the chosen scientific discipline (van Rooij et al., 2021), marital status, and family problems (Borders et al., 2020). The presence of academic and supervisor support (Lorensius & Lugan, 2022; David et al., 2019; van Rooij et al., 2021) was crucial.

Building positive relationships with academic advisors (Shin et al., 2023), having supportive supervisors (Peltonen et al., 2017; Kauret et al., 2022), and maintaining effective communication with peers and faculty members (Mydin & Surat, 2021; McWilliams & Shields, 2022; Yang & Cai, 2022; Zhangen et al., 2022), along with selecting a suitable field for doctoral studies (Van Rooij et al., 2021), were vital for achieving doctoral completion and success.

The difficulty of completing doctoral programs harmed students' mental health (Abrams, 2022; Mydin & Surat, 2021; Roos et al., 2021), resulting in decreased well-being (Abrams, 2022; Mydin & Surat, 2021; Roos et al., 2021). Levecque et al. (2017) found that 51% of doctoral students reported experiencing symptoms of poor psychological health during their studies. About 40% faced two health-related issues, particularly mental health concerns, while 32% exhibited at least three indications of stress and burnout, contributing to their diminished well-being. Their study indicated that doctoral students encountered poorer psychological health and well-being more often than the educated workforce and individuals with other higher education degrees. This underscored the need for increased support, guidance, attention, and research for doctoral students, for their benefit and for society (Corsini et al., 2022; Schmidt & Hansson, 2018).

Doctoral students experienced a gradual decline in cognitive capacity, particularly in decision-making, alongside a decline in their interest in their studies (Wollast et al., 2023). This deterioration correlated with a decline in overall well-being, which was often associated with psychological distress in higher education (Levecque et al., 2017). Some students faced pressure to complete their degrees within the typical span of five to eight years, which has led to challenges with self-efficacy and feelings of belonging in academic communities, prompting

them to question the suitability of pursuing a doctoral degree (Cornwall et al., 2018). These considerations adversely affected their decision-making processes, psychological well-being, and overall health (Schmidt & Hansson, 2018; Syropoulos et al., 2021).

Doctoral students pursued a doctoral degree to achieve their academic goals. This path frequently required foregoing social interactions, family events, and day-to-day work performance (Novotney, 2019). Earning a doctoral degree also opens the door to a research career at an international level (Borders et al., 2020), increases lifetime earnings, and leads to leadership positions across various fields of study (Borders et al., 2020; Morrow et al., 2020).

Doctoral students who frequently experience frustration were at risk of dropping out, which hurt their mental and physical health, ultimately leading to diminished psychological well-being (Charles et al., 2022; De Clercq et al., 2021; Mydin & Surat, 2021; Roos et al., 2021; Wollast et al., 2023). De Clercq et al. (2021) found that motivation and support from supervisors were crucial elements influencing educational success within two motivational profiles: the Globally Dissatisfied and the Globally Satisfied. They noted that supervisor involvement was among the least significant factors impacting doctoral projects, similar to the experience of self-determined students in self-determination theory (Deci & Ryan, 2000). These findings reinforced the principles of self-determination theory (SDT) within an educational setting and recommend further research on doctoral students' capabilities to tackle challenging tasks that require human behavior and courage.

Previous research on doctoral student completion, including studies by Charles et al. (2022), De Clercq et al. (2021), Hurts et al. (2022), and Shin et al. (2021), mainly relied on quantitative methods. In contrast, this study employed a qualitative approach to explore factors

influencing doctoral students' completion and to understand their experiences. De Clercq et al. (2021) recommended interviewing doctoral students from diverse backgrounds to gain a more comprehensive understanding of their experiences. Examining doctoral students from different disciplines, universities, and stages of their doctoral journey has yielded a well-rounded understanding of completion, persistence, success, and productivity. Furthermore, a deeper understanding of doctoral students' internal and external motivation has improved their quality of life, psychological well-being, and family dynamics. This subsequently bolstered the qualified workforce in academia and helped address low completion rates. Furthermore, De Clercq et al. (2021) posited that gaining insights into doctoral students' experiences elucidated how motivation and environment influence their satisfaction and professional effectiveness, ultimately leading to higher completion rates.

Statement of the Problem

This study addressed the low completion rate among doctoral students, which was 56.6% in 2021 (Council of Graduate Schools, 2023). Doctoral/Ph.D. students needed significant support and guidance throughout their studies to mitigate the risk of discontinuation (De Clercq et al., 2021; Lehan et al., 2021; Okoro et al., 2022). When students were in an unexpected situation to withdraw during their studies, it adversely affected their mental health, leading to feelings of dissatisfaction and perceived personal failure, alongside symptoms of stress and anxiety (Elsharnouby, 2015; Heublein & Wolter, 2011; O'Gorman, 2020; Sverdlik et al., 2018). This also resulted in decreased financial stability (Heublein & Wolter, 2011; Sverdlik et al., 2018; Voelke & Sander, 2008) and limited life opportunities, such as engaging in further education, sports, and maintaining family relationships (Hazell et al., 2022; Jackman & Sisson, 2022; Sverdlik et al., 2018). Larcombe et al. (2021) and Mugendi Githae (2021) identified mental

health issues and financial stress as significant predictors of discontinuation. Additionally, Amani et al. (2022) noted that the dynamics between a supervisor and a student, particularly regarding expectations, roles, and responsibilities, are a strong predictor of continuation or discontinuation.

Predictors of non-completion in doctoral programs were based on individual student circumstances, including employment status, family structure, marital and parental status, financial stability, and diverse backgrounds. These factors significantly affected students' motivation, persistence, productivity, and overall success. However, there was insufficient investigation into the factors that influenced these aspects of the student experience. The journeys of doctoral students throughout various stages in different programs and educational institutions require further exploration (De Clercq et al., 2021; Lehan et al., 2021). To gain a clearer understanding of students' motivations, persistence, productivity, and success throughout their academic journey, De Clercq et al. (2021) recommend conducting interviews with doctoral students from diverse backgrounds to learn how their motivation enables them to continue their studies.

Purpose of the Study

The purpose of this qualitative descriptive study was to gain an in-depth understanding of the motivational factors that have influenced doctoral students' persistence, productivity, and success through their experiences. For instance, Syerdlik and Hall (2020), De Clercq et al. (2021), and Lehan et al. (2021) have advocated further investigation into the experiences and obstacles doctoral students face at each phase of their academic journey. Furthermore, graduate programs require adequate support during transitional periods, which include enhanced socialization opportunities and access to mental health services during the final dissertation

phase. These initiatives from educational institutions were crucial for enhancing students' motivation, psychological well-being, and overall health as they pursued their doctoral degrees.

This research aimed to assist students in learning from doctoral candidates' experiences, gaining insights into their motivation at different stages of the completion process across various disciplines and institutions relevant to persistence. The study identified the factors doctoral students believed influenced their persistence and satisfaction throughout their academic journey. The participants in this study were doctoral students from a range of disciplines and at various academic stages, as well as from multiple universities. Those involved include doctoral graduates who have earned a Ph.D. (to gain insights into their experiences during the completion process) and those with degrees from various fields of study and institutions.

Qualitative methods involved purposive sampling, recruiting 15-18 doctoral students who had completed their studies. The investigation achieved objective validity and trustworthiness (Creswell, 2009). The sample size was designed to allow the researcher to sample and analyze iteratively until data saturation was reached, ensuring that no new themes emerged in later analyses and data management (Maxwell, 2005). Recruitment and data collection were concluded once saturation was achieved, at which point the final sample size was confirmed. This study used social media platforms, including LinkedIn and Twitter, for recruitment. The screening process targeted individuals who had earned a doctoral degree and were willing to share their experiences during their studies. A follow-up email was sent to confirm participants, reminding them of the date, time, location, and duration of the research session, as well as the study's purpose and expectations. Data was collected through open-ended interview questions in their natural settings via the Zoom app. Recorded interviews were transcribed using a Zoom Business account, which was not free but pre-installed in the Zoom application. A member-

checking process involved presenting transcript data via email for participants' feedback to confirm correctness and make any necessary edits (Varpio et al., 2017). The study employed an eight-step thematic analysis using NVivo software, which was well-suited for a descriptive approach (Thompson, 2022).

Introduction to Theoretical or Conceptual Framework

This study's framework was guided by the self-determination theory (SDT) (De Clercq, 2021; Ryan & Deci, 2019). Multiple researchers (De Clercq et al., 2021; Devos et al., 2015; Mason, 2012; Shin et al., 2021; van Rooij et al., 2019) emphasized the need to collectively consider contextual factors, motivations, and students' perceptions when evaluating their impact on doctoral completion. SDT aimed to empower individuals to make healthy choices by actively, willingly, and autonomously engaging with their interests, thereby integrating them to achieve desired outcomes (Chiu, 2021). SDT served as a motivational framework across fields such as health, sports, education, and the workplace. A healthy lifestyle and quality of life are crucial goals for everyone, significantly influenced by personal habits and lifestyle decisions (Ryan et al., 2024). Motivation fueled the energy directed toward objectives, profoundly influencing individuals' lives and their capability to enact long-term changes that enhanced their health.

SDT analyzes how a student's behavior is influenced by the consequences of controlled versus autonomous motivations (Deci & Ryan, 2000). The concept of Basic Psychological Needs (BPNs) suggests that satisfaction facilitates autonomous pursuits, such as a doctoral student continuing their studies and engaging in activities simply because they enjoy themselves, aligning with personal values, and acknowledging the benefits of their achievements (Desi & Ryan, 2000). A sense of competence enabled individuals to handle tasks effectively (Wigfield et al., 2006). Autonomy refers to doctoral students' sense of having choices in their actions and

making those choices willingly (Ryan et al., 2024). Competence conveys a sense of control and success in their academic efforts, and relatedness represents the need for connection with others, fostering a sense of belonging among doctoral students (Ryan et al., 2024). The social environment supported or hindered students' efforts based on how well it addressed their BPN (Kermavnar et al., 2024). Earlier motivation theories were simplistic, stating that one is either motivated or unmotivated (Kermavnar et al., 2024). Nevertheless, research over the last 40 years has revealed that motivation is far more intricate than initially perceived. Regardless of whether students display initiative or self-control, the quality of their motivation is essential for fostering happiness and achieving long-term goals (Datu, 2021).

Incentives, punishment, and peer pressure drove motivational behavior, which also resonated with intrinsic values, interest, and pleasure (Morris et al., 2022). Nonetheless, individuals experienced heightened pressure or an increased sense of control in their actions, believing they had more influence over their behavior (Wigfield et al., 2006). The sense of self-determination among doctoral students was shaped by their personal interest in learning and their determination to pursue coursework that reflected their passions. Self-Determination Theory (SDT) posits that feelings of autonomy, competence, and relatedness are interconnected with the structured information hierarchy and with doctoral students' autonomy and involvement as they persist in their studies (Ryan & Deci, 2020).

Numerous researchers (De Clercq et al., 2021; Howard et al., 2021; Litalien et al., 2019; Shin & Bolkan, 2021) have asserted that Self-Determination Theory (SDT) offers a comprehensive framework for understanding the intricate nature of students' motivational experiences and their overall satisfaction in higher education. Several studies have recognized Self-Determination Theory (SDT) as a suitable framework for exploring the motivational drivers

of doctoral students (Goldman et al., 2017; Guay et al., 2021; Howard et al., 2021; Litalien et al., 2019). Additionally, several authors have noted that SDT is effective in unraveling the complexities of motivation in higher education and the factors influencing students' completion rates (Maroco et al., 2020; Ryan & Deci, 2020; Shin & Bolkan, 2021; Toth-Kiraly et al., 2020).

The overall cultural environment in American educational institutions influenced students' BPNs (BPN) and related practices (Vansteenkiste et al., 2020). For instance, diverse doctoral students perceived a supervisor's instructional style, particularly controlling behaviors, as shameful and detrimental, resulting in decreased motivation and interest in their studies. Consequently, this research examined BPNs among doctoral students, with an emphasis on persistence and satisfaction (success), acknowledging that each student was an individual shaped by distinct behaviors, social contexts, emotions, perceptions, and understandings.

Addressing the research questions, SDT played a crucial role in fulfilling the study's objectives and supporting the academic aspirations of doctoral students by understanding the issues at hand and pinpointing early high-risk factors within a highly diverse demographic. Individuals encountering difficulties often struggle with self-doubt or feelings of inadequacy, which have hindered their progress, along with the belief that they lack control and the ability to succeed.

Introduction to Research Methodology and Design (Nature of the Study)

A qualitative descriptive design was selected for its adaptability and exploratory nature in qualitative research (Creswell, 2007). The literature acknowledged descriptive design as a legitimate research method for theses and scholarly work, although its acceptance varied across academia (National University Library, 2023). Qualitative research utilized an inductive approach, describing phenomena and answering research questions while clarifying the

relationships between known and unknown factors that affected completion rates (Creswell, 2007). The qualitative research process involved developing methodologies and conducting in-depth interviews. Data was collected in a setting involving doctoral students, particularly through web-based Zoom meetings. The deductive analysis and interpretation of the data aimed to illuminate doctoral students' experiences. This study employed standard ethnographic methods, including participant observation (useful for investigating interactions and behaviors) and ethnographic interviews (important for uncovering firsthand experiences and viewpoints). Qualitative methods included sampling and purposive sampling strategies. The sample size was determined to allow the researcher to continue sampling and analyzing until data saturation was achieved, ensuring that no new themes emerged in subsequent analyses. This also involved managing data and applying analytical techniques, such as condensing data into key themes and ideas that were coded and organized into categories, leading to initial insights that guided further data collection until saturation was reached (Creswell, 2013). McKin (2023) pointed out that the member-checking process was straightforward and required minimal effort from both participants and researchers. It served as an effective tool that required a systematic approach, beginning with data interviews and followed by subsequent data analysis. Coffey and Atkinson (1996) argued that thematic analysis provided a deep understanding of the collected data, enabling theoretical generalizations of the findings. Final concepts were crafted for analyzing and presenting the data. The credibility of the findings was strengthened through data triangulation, which included collaboration among researchers from different disciplines and viewpoints or multiple researchers independently coding the same data (Thompson, 2022). Additionally, incorporating theoretical frameworks from various perspectives and conducting

individual interviews to gather supplementary data also bolstered the findings (Thompson, 2022).

Research Questions

This study sought to enhance understanding of the motivations driving doctoral students' experiences, including their profiles and completion rates. Insights were gained regarding the experiences of doctoral students at various stages across different programs (De Clercq et al., 2021). According to Ratan et al. (2019), formulating research questions was crucial before initiating a study, as they aimed to address uncertainties surrounding the issue and necessitate thoughtful discussion. Staller (2022) noted that interview questions should be phrased in simple language that participants can easily understand. The following three research questions were explored:

RQ1

What do doctoral students perceive impacted their persistence at distinct stages (coursework, capstone, or dissertation) in their program?

RQ1a

How do the perceptions of factors influencing persistence differ across disciplines?

RQ2

How do doctoral students perceive autonomy, competence, and relatedness influence their persistence at distinct stages of their program?

RQ2a

How does this influence differ between students at various stages in different academic disciplines?

Significance of Study

The importance of this study was in gathering insights from current doctoral students about their experiences. The aim was to gain a richer understanding of the completion process and its impact on completion rates. The goal was to broaden knowledge to help shape a program that clarifies or adjusts the doctoral academic journey, viewed through the lens of self-determination theory (SDT), emphasizing fundamental psychological needs such as autonomy, competence, and relatedness (Ryan & Deci, 2019). The qualitative results might enrich SDT by providing a deeper understanding of doctoral students' experiences at various stages and across different fields of study. Additionally, this research has provided practical foundations for doctoral students, enhancing their decision-making regarding enrollment and potential dropout during the various stages of their doctoral programs.

The objective was to deepen understanding of the doctoral completion process and the basic psychological needs (BPNs) of autonomy, competence, and relatedness (Ryan & Deci, 2020; De Clercq et al., 2021). The literature reviewed defines Self-Determination Theory (SDT) as a crucial psychological need for individual growth, integrity, and adjustment (Ryan, 1995; Ryan & Deci, 2017). In this study, educational aspiration was conceptualized as a formal BPN state in which an individual's fulfillment was vital to their well-being, with dissatisfaction leading to increased defensiveness, ill-being, and passivity (Vansteenkiste, 2020). Most researchers have analyzed various BPN components to assess doctoral students' satisfaction and well-being, including how safety and threat perceptions influence BPN during challenging times in the completion process (Vermote et al., 2021). Additionally, this study has shed light on the effects of the COVID-19 pandemic on doctoral students' completion experiences and the relationship between Self-Determination Theory (SDT), Basic Psychological Needs (BPN) components, and security needed during challenging periods, informing decision-making in

navigating the completion process (Sverdlik et al., 2022). This research could contribute to the literature on leadership roles and the experiences of recently graduated doctoral students from various universities by investigating how BPN components affected their completion rates and experiences. By examining doctoral students' experiences throughout their programs, this study aimed to enrich the empirical literature on the completion process. Sverdlik et al. (2018) noted that fewer than 30% of studies employed qualitative methods, 18% used mixed methods, and over 41% focused on quantitative analyses. Qualitative data provided valuable insights into supervisors' and administrators' perceptions of doctoral students' experiences and their impact on completion rates (Shin et al., 2022). Exploring doctoral students' lived experiences enabled a clearer understanding of BPNs and their connections within SDT by detailing these experiences. BPN and its components stem from research on Self-Determination Theory (SDT) and motivation (Ryan & Deci, 2017), making significant contributions to development, behavior, and motivation (Gagne & Deci, 2005; Ryan & Deci, 2017; Vermote et al., 2021).

This study has provided insights into doctoral students' experiences as they completed their programs, informing personnel and organizational practices that impact future decision-making and promote students' psychological health and overall well-being (De Clercq et al., 2021). Understanding these experiences provided educational leaders with more opportunities to identify policies and practices that fostered autonomy, relatedness, and competence (Shin et al., 2022). Furthermore, this research has shed light on the factors that influenced doctoral students when they failed to meet their personal and academic objectives. Stress and loneliness were prevalent experiences in all organizations, especially among doctoral students. This study has shed light on ways to address or mitigate these specific challenges (Lehan et al., 2021; Mofatteh, 2020). Gaining insights into the experiences of doctoral students in psychology, education, and

the workplace could enable them to recognize patterns, behaviors, and characteristics that emerge from the research, thereby enhancing their understanding of the contextual factors that influenced their success. Approximately 48% of doctoral students did not complete their degrees due to distinct individual circumstances, and this study has offered insights into lessons learned to avoid similar situations in the future (National Association of Higher Education, 2022).

This study, regardless of its outcomes, has the potential to enhance scholarly research aimed at addressing doctoral students' completion rates. It was essential, as it aimed to gather insights to support doctoral students in achieving success in their programs and address challenges often compounded by unrecognized factors. The study aimed to make a unique contribution to the literature by applying self-determination theory, taking into account each doctoral student's experiences at any stage of the completion journey. The importance of this research was reflected in its goal to provide a thorough understanding of the amassed data and to investigate the perspectives of students at risk of not completing their degrees, which could has revealed the influence of academic and cultural elements on doctoral programs, as well as the unrecognized factors that affected both positive and negative completion rates (Hanson et al., 2022).

Definitions of Key Terms

Autonomy

Autonomy is the ability to initiate and regulate one’s behavior (Deci & Ryan, 2000).

Basic Psychological Needs (BPN)

BPNs serve as essential psychological nutrients vital for an individual's adaptation, integrity, and development. A need is deemed basic only when fulfilling it is critical for well-

being, while its unmet fulfillment heightens the potential for passivity, unhappiness, and defensiveness (Ryan & Deci, 2000a; Vansteenkiste & Ryan, 2013).

Burnout

Burnout indicates chronic stress that is not effectively managed (World Health Organization, 2019).

Competence

The capacity to face challenges, accomplish tasks or projects, and reach objectives (Deci & Ryan, 2000; Fernet et al., 2023).

Doctoral Students' Experiences (DSE)

DSE participates in various events and activities, including academic pursuits and work, which are essential for capturing and developing cumulative influences (McAlpine & Weston, 2000).

Extrinsic Motivational Factors (EMF)

An extrinsically motivated EMF is someone whose learning is driven by the pursuit of rewards, such as grades or praise, rather than the learning itself (Gardner, 1985).

Intrinsic Motivational Factors (IMF)

The IMF represents a person dedicated to acquiring new knowledge to enhance their experience in this field (Gardner, 1985).

Psychological Health (PH)

PH represents a state of well-being where a person realizes their potential, manages daily stressors effectively, works productively, and contributes positively to their community (A Scientific Statement from the American Heart Association, 2021)

Psychological Distress (PD)

PD is a distinct experience characterized by discomfort, feelings of demoralization, individual encounters of mental or emotional pain, anger, a perceived loss of control, and self-criticism (Carrozzino et al., 2023).

Relatedness

The document describes relatedness as the feeling of belonging and connection to important people, including family, friends, or society (Deci & Ryan, 2000).

Summary

This qualitative descriptive study sought to comprehensively explore doctoral students' experiences at various stages and across different disciplines. Doctoral students encountered numerous challenges, facing unexpected obstacles that hindered their ability to achieve both academic and personal goals. Those at risk of dropping out often experience frustration, which hurts their health and leads to symptoms of poor psychological well-being (De Clercq et al., 2021; Mydin & Surat, 2021; Roos et al., 2021; Charles et al., 2022; Wollast et al., 2023). This situation has repercussions not only on national economies (Cohen & Bauch, 2022) and academic institutions (Hazell et al., 2022; Jackman et al., 2023; Jackman & Sisson, 2022; Kaur et al., 2021) but also on their future careers in leadership roles (Borders et al., 2020) and research endeavors (De Clercq et al., 2021; Mydin & Surat, 2021). Several studies indicated that financial burdens (Shin et al., 2021), the specific scientific discipline (van Rooij et al., 2021), marital status and family issues (Borders et al., 2020), as well as the level of academic and supervisory support (Barnes, 2023; Uribe-Florez et al., 2019; van Rooij et al., 2021) contributed to doctoral students' challenges in completing their studies.

This qualitative descriptive design was chosen for its flexible and exploratory approach to qualitative research. Qualitative research employed an inductive approach, providing detailed

descriptions of phenomena while addressing the research questions. It revealed clear connections between known and unknown factors that influenced completion rates. The study recruited around 10 participants, which was sufficient to achieve objective validity and trustworthiness. The participants were doctoral students from various disciplines at different stages of their academic journeys. Recruitment occurred via a web-based agency, targeting doctoral students at various points, including those considering dropping out and those who have just completed their studies (having earned a doctoral or Ph.D. degree).

For this study, data were collected through Zoom interviews with doctoral students from various disciplines at different stages of their education, conducted in their natural settings. The research employed qualitative methods and purposive sampling. The sample size was flexible, allowing the researcher to analyze the data iteratively until saturation was reached, indicating that no new themes emerged. Thematic analysis served as a crucial tool, providing a comprehensive understanding of the collected data and facilitating theoretical generalization of the findings. The final report focused on the experiences of doctoral students who adopted an inductive approach. It highlighted the challenges of not completing doctoral studies. This methodology was applicable for analyzing qualitative research data in diverse formats, including text, unstructured video, audio, and images.

This study was framed by SDT, which directed research design and questions. SDT emphasized the concepts of autonomy, competency, and relatedness, all underpinned by BPN. The focus was on examining the characteristics of doctoral students as they complete their studies (Guay, 2022).

This study was based on self-determination theory, which posits three fundamental psychological needs: autonomy, competence, and relatedness. It explored how these basic

psychological needs contributed to doctoral students' success in completing their studies (Guay, 2022; Ryan & Deci, 2019).

The research utilized a qualitative descriptive design and the SDT framework to gain insights into doctoral students' experiences, enhancing understanding of factors that inhibited their progress in this population (Creswell, 2009; De Clercq et al., 2021; Guay, 2022; Shin et al., 2022; Mydin & Surat, 2021; Ryan & Deci, 2019; van Rooij et al., 2021). The focus was on gathering detailed descriptions of participants' (doctoral students') experiences across various stages, and on how individual situations relate to satisfaction with BPN within an academic setting. Ethical considerations were crucial in qualitative research, as ethical standards emphasized the researchers' responsibilities toward the interests and rights of the audience, participants, society, and the academic community (Cameron et al., 1994; Judd et al., 1991). Analyzing and synthesizing doctoral students' interpretations of their experiences aimed to clarify and expand the literature on SDT's contributions, thereby aiding understanding of this phenomenon and potentially informing future research and practices.

Chapter 2: Literature Review

The purpose of this study was to use a qualitative descriptive approach to gain a detailed understanding of the motivational factors that influence doctoral students' persistence, productivity, and success through their experiences. The problem addressed in this study is the low completion rate of doctoral students, which was reported as 56.6% in 2021 (Council of Graduate Schools, 2023). Syerdlik and Hall (2020), De Clercq et al. (2021), and Lehan et al. (2021) have called for further research to explore the experiences and challenges doctoral students face at each stage of their studies. Additionally, doctoral students transitioning from coursework to the dissertation phase need more support during this challenging period, including socialization opportunities and access to mental health resources during the final dissertation stage (Sverdlik & Hall, 2020). These efforts by educational institutions are essential to maximizing students' motivation, psychological health, and well-being as they pursue doctoral degrees (Sverdlik & Hall, 2020).

I began Chapter 2 by reviewing, synthesizing, and discussing the theoretical framework for the proposed study. I selected the guiding self-determination theory (SDT) as the foundation for this study. I then explained and justified the choice of SDT as the study's framework. I contextualized the problem and situated the study using current, relevant literature about doctoral students' completion rates. Next, I presented a brief history of achievement, dropout, and factors impacting doctoral students' success. Then, I reviewed and discussed the relevant literature, examining these factors and their impact on doctoral students' completion rates. By reviewing recent literature, I provided a comprehensive, critical discussion of current research on how doctoral student persistence can be identified during the completion process. The literature on doctoral students' persistence, motivational factors, performance, success, and satisfaction is

synthesized to discuss the development and application of self-determination skills and stakeholder beliefs. Programming and curricular adaptations are examined as environmental factors. The sections were designed to help understand doctoral students' experiences with persistence, motivation, productivity, and success at different educational institutions and disciplines, as well as the stages of the completion process.

Furthermore, these sections aim to explore doctoral students' experiences with persistence, motivation, productivity, and success across different educational institutions, disciplines, and stages of the completion process. The following literature review offers a comprehensive and critical overview of current information on how doctoral student persistence relates to the completion process. The literature is divided into subsections on persistence, motivational factors, performance, success, and satisfaction, combining information relevant to developing and applying self-determination skills, as well as stakeholder perceptions of their application. Environmental factors, such as programming and curricular adaptations, are also reviewed. This section concludes with a summary of the literature review that highlights key aspects of doctoral students' experiences with persistence.

Doctoral or Ph.D. students who need support and guidance to complete their studies are at risk of dropping out (De Clercq et al., 2021; Lehan et al., 2021; Okoro et al., 2022). Dropping out during this phase can negatively affect mental health through dissatisfaction with education as a personal failure, leading to symptoms of stress and anxiety (Elsharnouby, 2015; Heublein & Wolter, 2011; O'Gorman, 2020; Sverdlik et al., 2018), reduced financial stability (Heublein & Wolter, 2011; Sverdlik et al., 2018; Voelke & Sander, 2008), and fewer life opportunities, such as interest in further education, sports, and family relationships (Hazell et al., 2022; Jackman & Sisson, 2022; Sverdlik et al., 2018). Larcombe et al. (2021) and Mugendi Githae (2021) found

that mental health issues and financial stress were among the strongest predictors of discontinuation. Amani et al. (2022) also revealed that the expectations, roles, and responsibilities in the supervisor-student relationship strongly predicted doctoral students' persistence in completing their degrees.

All articles downloaded for the literature review were previewed and retrieved from the university library database using academic research engines such as PsycINFO, ERIC, and ResearchGate, as well as the free Google Scholar. Most of the articles were published within the last five years, although I also reviewed and included some sources over 10 years old as references. Most search engines, whether searching online databases or the web, offer two levels of search options. Basic searches were performed using keywords such as doctoral students, students, retention, completion rates, higher education, doctoral study, Ph.D., motivation, achievement, success, dropout, factors impacting doctoral students' completion process, decision-making process, environment, diversity, educational institutions, stages of the doctoral study process, students' backgrounds, cultural differences, language (mother tongue) other than English, international doctoral studies, persistence, motivational theories, self-determination theory, students' experiences, doctoral students' experiences, and doctoral students' life stories. The databases were accessed, and the search engines were utilized.

Theoretical Framework

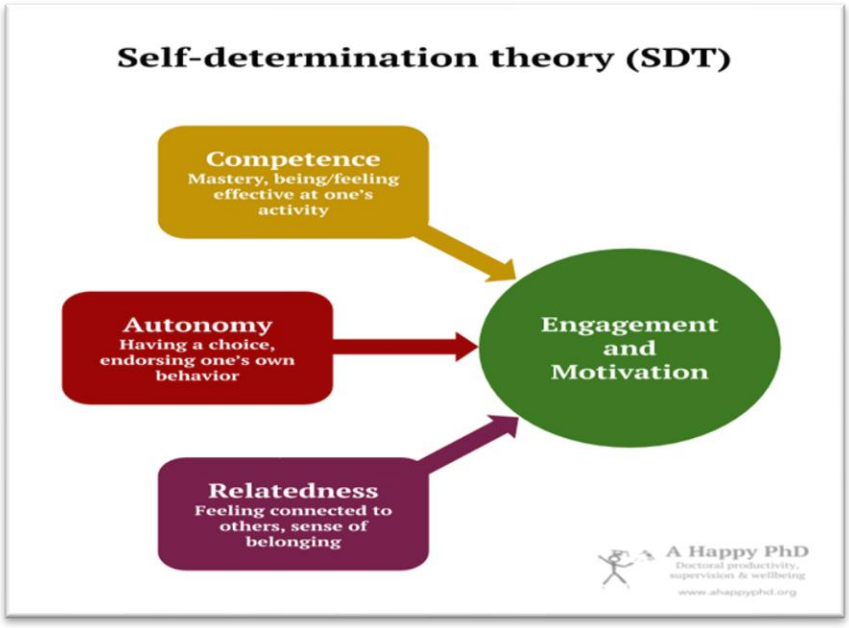
Self-determination theory (SDT) (Deci & Ryan, 1985, 2000) is a theory of motivation, social processes, development, and personality that explores how individual and social contexts influence the type of motivation, including controlled and autonomous motivation. SDT helps predict psychological health, experience, performance, and learning outcomes (Deci & Ryan, 1985, 2000). Research on SDT mainly focuses on intrinsic motivation, a psychological

drive to actively engage in activities for pleasure, fulfillment, and excitement (Ryan & Deci, 2019). In psychological research, SDT explains how supporting autonomy, competence, and relatedness fosters high-quality motivation in students (De Clercq et al., 2021). A key component of SDT is the BPN, which is related to human nature, thriving, and well-being. The core of BPN consists of three elements: autonomy, competence, and relatedness (Ryan & Deci, 2019). Deci and Ryan (2000) emphasized that satisfying these BPN is vital for mental health and well-being. When these needs are fulfilled, individuals are more likely to experience positive psychological outcomes, such as intrinsic motivation, high-quality performance, and overall wellness. Conversely, when these needs are thwarted or unmet, individuals may face negative mental health effects, such as reduced motivation, lower performance, and diminished well-being. Research indicates that social contexts and individual differences that support satisfying these basic needs promote natural growth and contribute to mental health, while those that hinder autonomy, competence, or relatedness are linked to deficits in well-being and the development of compensatory or defensive behaviors (Deci & Ryan, 2000).

The important implications of BPN relate to well-being and self-development through motivation and engagement (Vansteenkiste & Ryan, 2013). Supporting students' basic needs is essential to foster intrinsic motivation and the internalization of psychological integrity and growth (Ryan, 1995). The extrinsic goals include fame/popularity, success, financial stability, and appearance, which are linked to intrinsic goals involving personal growth, relationships, and societal concerns, as well as mental health issues and overall well-being (Ryan & Deci, 2019).

Figure 1

Essential Psychological Needs Components of Self-Determination



Note: Figure 1 shows three components of SDT: competence (mastery, being/feeling) and effectiveness at one's activity—autonomy (having a choice), endorsing one's behavior. Relatedness is the feeling of connection to others and a sense of belonging. These three components lead to engagement and motivation. Prieto (2019). Choosing not to drop out: A view from self-determination theory. retrieved from https://ahappyphd.org/posts/choosing-not-drop-out/#fnref:2&gid=1&pid=1 on 06/10/2024

The SDT serves as the guiding framework for this study (De Clercq, 2021; Ryan & Deci, 2019). Several authors (De Clercq et al., 2021; Devos et al., 2015; Mason, 2012; Shin et al., 2021; van Rooij et al., 2019) emphasized the importance of considering contextual variables, motivations, and students' beliefs together when examining their impact on doctoral completion. According to Deci & Ryan (2000), SDT states that satisfying BPN (competence, autonomy, and relatedness) is essential for developing self-determined motivation and maintaining optimal mental health. It proposes that individuals have an inherent tendency toward growth and self-determination, and that motivation and behavior regulation involve internalizing and integrating

external regulations. The social context influences the satisfaction of these needs, and environments that support autonomy, competence, and relatedness are more likely to promote their fulfillment and foster optimal motivation and well-being. Additionally, Carver and Scheier (1998) introduced two types of regulation: self-regulation and behavioral regulation. Self-regulation involves internal processes through which individuals monitor, evaluate, and adjust their thoughts, emotions, and behaviors. This includes setting goals, making plans, and exercising self-control. Behavioral regulation, on the other hand, focuses on external factors that influence behavior, including rewards, punishments, incentives, and constraints.

SDT is a theory of motivation applied in various fields, including health, sports, education, and work. Health is a fundamental goal for all humans, heavily influenced by their habits and lifestyle. In Figure 1, motivation is depicted as a goal (based on the BPS component of SDT). According to Deci and Ryan (2000), motivation is closely related to goal pursuit and achievement. The driving force energizes and guides behavior toward a specific goal. Motivation is essential for initiating and sustaining goal-directed actions, influencing individuals' effort, persistence, and engagement in related activities. It can improve performance, build resilience against obstacles, and encourage effective problem-solving, all of which contribute to achieving goals.

SDT is one of psychology's widely applied and researched theories, confirming practical value across multiple disciplines (Ryan & Deci, 2017). The development of SDT has been a continuous and progressive process. Its historical impact and expansion demonstrate its success within the scholarly and research communities, utilizing various approaches across all psychological sub-disciplines, from social psychology to neuroscience. Several scholars and researchers have contributed to SDT, evolving it beyond its origins, which centered on intrinsic

motivation (Deci & Ryan, 1980), transforming it into a comprehensive theory of human personality, motivation, development, and well-being (Ryan et al., 2018). Ryan & Deci (2017) found that SDT incorporates distinct types of motivation, each characterized by unique qualities, phenomenology, and energy. These motivational types can be predicted along the self-determination continuum, ranging from intrinsic motivation to amotivation (Ryan & Deci, 2020; Howard et al., 2017).

According to Ryan and Deci (2020), SDT provides a comprehensive framework for understanding the factors that support or hinder intrinsic motivation, self-driven external motivation, and mental well-being, all of which are directly relevant to educational environments. The authors examined SDT studies demonstrating that intrinsic motivation and internally embraced (and therefore self-driven) types of external motivation are reliable indicators of various positive outcomes across different educational settings and cultural contexts. These outcomes are strengthened by supporting the fundamental psychological needs of doctoral or PhD students for independence, competence, and connection. The research also revealed a strong link between teachers' and students' motivation, as controlling regulations, institutional pressures, and leadership approaches influence teachers. Despite ample evidence highlighting the importance of fulfilling psychological needs in educational settings, many existing policies and practices worldwide are based on traditional motivational models that fail to address the needs of both students and teachers. It is crucial to bridge the gap between knowledge and policy in this area.

Furthermore, SDT in education should be used to support students and teachers in meeting their basic psychological needs (Ryan & Deci, 2020). Numerous studies in school settings at various academic levels and across cultures have confirmed SDT's claim that fulfilling

basic psychological needs fosters students' natural, integrated motivation, thereby enhancing their overall well-being. Additionally, research has gradually identified key aspects of the need for supportive teaching methods. Supporting basic psychological needs is essential, and understanding how to create an environment where teachers can provide this support is crucial. Although students and teachers possess considerable knowledge about factors that promote engagement, motivation, and authentic learning, policies that fulfill their basic psychological needs are not widely implemented (Patall & Zambrano, 2019). Supporting learners' psychological needs poses challenges for teachers due to institutional barriers, including mandated curricula, performance pressures, grading standards, and high-stakes testing. Significant gaps remain between current educational policies and practices and the insights from SDT research on best practices. Addressing these gaps is vital if teachers are to equip students with the skills needed to face 21st-century challenges.

In summary, the literature discusses the SDT and its key components, emphasizing autonomy, competence, and relatedness as fundamental to motivation, well-being, and optimal mental health. It emphasizes that satisfying basic psychological needs leads to positive outcomes, such as intrinsic motivation and high-quality performance, whereas unmet needs can lead to adverse mental health effects. SDT is widely applied across fields such as education, health, and work, underscoring the importance of supporting individuals' basic psychological needs for natural growth and well-being. The theory also addresses different types of motivation, the role of self-regulation, and the influence of external factors on behavior. Additionally, it underscores the importance of bridging the gap between research findings on psychological needs and educational policies to improve student and teacher motivation and engagement. SDT helps doctoral students persist in completing their studies by emphasizing the satisfaction of basic

psychological needs, competence, autonomy, and relatedness, which are crucial for developing self-determined motivation and optimal mental health, thereby enhancing students' perseverance. It provides a framework that considers contextual factors, motivations, and students' beliefs together, highlighting their impact on doctoral completion. The theory proposes that individuals have an innate tendency toward growth and self-determination, which influences motivation and behavior regulation through internalizing and integrating external regulations. It emphasizes the importance of environments that support autonomy, competence, and relatedness in fulfilling basic psychological needs, promoting optimal motivation and well-being. It demonstrates that intrinsic, internally embraced external motivation is a reliable predictor of positive outcomes in educational settings, thereby strengthening doctoral students' motivation. Furthermore, it reveals a strong correlation between teachers' and students' motivation, suggesting that supporting teachers' motivation can positively impact doctoral students' persistence. It also offers insights into the importance of fulfilling psychological needs in educational settings. It guides the development of supportive teaching strategies that can boost students' motivation and well-being, aiding their persistence toward completing their doctoral studies.

Related Studies that Use SDT and BPN

Several studies have employed SDT in ways similar to the current proposed study. Related literature examining students across different countries supports SDT. A study by Chen et al. (2015) examined satisfaction and frustration related to basic psychological needs and their impact on well-being across diverse cultures. The study included late adolescents from four countries: the midwestern region of the USA, Beijing, China, the Dutch-speaking part of Belgium (Flanders), and Lima, Peru. The total sample comprised 1,051 participants: 298 from the USA, 309 from China, 200 from Belgium, and 244 from Peru. The participants' average age

was 20 years. The goal of the study was to examine the relationship between psychological need satisfaction and frustration and various indicators of well-being and ill-being. Psychological well-being was measured using indicators such as life satisfaction and subjective vitality, while ill-being was assessed via depressive symptoms. The findings indicated that the satisfaction of basic psychological needs was linked to psychological well-being, whereas the frustration of these needs was associated with ill-being. The study focused on exploring the relationships between need satisfaction, need frustration, and indicators of well-being across different countries. Results showed that the satisfaction and frustration of psychological needs for autonomy, relatedness, and competence significantly influence participants' well-being and ill-being across cultures. Additionally, the study successfully adapted and validated a basic need scale, demonstrating that distinguishing between need satisfaction and need frustration was valuable, with each showing unique associations with well-being and ill-being. The findings also underscored the role of psychological needs in shaping well-being outcomes, supporting the universality claim of Basic Psychological Need Theory (BPNT).

The purpose of Zak-Moskal and Garrison's (2020) study was to explain SDT, examine current retention research through an SDT perspective, and promote scholarly debate about whether SDT is suitable as a guide for student retention. The researcher argued that creating institutional cultures that acknowledge and address students' basic psychological needs for motivation gained early support from the review of the study industry and the understanding of retention strategies' outcomes.

Importantly, this review highlighted that autonomy is the least understood and least common element in conservation programs. Autonomy support must be fundamentally connected to students evaluated academic and social skills, including their ability to navigate

university life. According to Garrison (2020), when doctoral students choose their path to graduation, they are more likely to relate to and find inspiration in their college experience. Within SDT, the self-efficacy framework does not encompass the cognitive, social, and emotional aspects of motivation related to academic performance. The author urged professionals working with students to discuss, implement, and explore how SDT can improve student success and retention. The research reviewed supports the idea that SDT can serve as a comprehensive model for understanding and promoting student retention.

Conversely, narrative synthesis results highlighted that few studies have examined emotion regulation and academic buoyancy within a self-determination framework (Kritikou & Giovazolias, 2022). According to the inclusion and exclusion criteria, more studies on factors related to students' academic adjustment, satisfaction of basic needs, and frustration were found suitable. Kritikou and Giovazolias (2022) systematically reviewed and investigated factors associated with emotion regulation, academic buoyancy, and academic adjustment of university students within a self-determination theory framework. The study's outcome was the identification and analysis of factors linked to emotion regulation, academic buoyancy, academic adjustment, and the satisfaction and frustration of basic psychological needs in higher education students within this framework. The study found that factors such as gratitude and kindness, as well as the three basic psychological needs (competence, relatedness, and autonomy), difficulty performing purposeful behaviors related to emotional creativity, were all associated with emotion regulation. Factors such as autonomous motivation, students' adaptability, and best personal goals were linked to academic buoyancy.

Factors linked to academic adjustment included learning engagement, goal orientations, intention to drop out, academic self-efficacy, high school GPA, credit points earned, academic

motivation, self-oriented perfectionism, learning strategies, and satisfaction of basic psychological needs. Factors related to basic psychological need satisfaction and frustration encompassed academic satisfaction, experiences of autonomy support in the learning environment, learning climate, academic adjustment, life satisfaction, resilience, well-being, study commitment, engagement, self-efficacy, intimacy, parental autonomy support, parental involvement, attachment styles, faculty support, peer support, and the learner's autonomy. These factors are consistent with another review that emphasized affective, cognitive, motivational, and individual factors related to emotion regulation (Matthews et al., 2021). An explanation for the fact that few articles were found to be eligible could be that, based on the literature described (Benita et al., 2019; Benita, 2020; Roth et al., 2014, 2019), the field of emotional regulation has recently developed within the self-determination framework. Only a few studies investigated students' persistence in overcoming difficulties, challenges, and setbacks, which are part of university students' everyday academic life.

Several studies have shown that autonomous motivation, student adaptability, and personal best goals are positively and significantly linked to academic achievement. Indeed, empirical research suggests that students frequently struggle to navigate the typical challenges in their educational environment. This disruption undermines adaptive patterns of motivation and engagement (Martin et al., 2013). Other researchers (Collie et al., 2015) also emphasized that persistence is related to internal control over academic performance, a key aspect of motivation and engagement. However, since most research focuses on primary or secondary education (Devi et al., 2019), more studies are needed to understand the academic role and related factors for school recovery in higher education. Factors associated with students' academic adjustment and satisfaction of their basic psychological needs have been categorized into

academic, individual, and family factors. These factors, deemed important, were also highlighted in a recent review (Zak-Moskal and Garrison, 2020), which emphasized the link between student retention and a college's failure to meet students' basic psychological needs. Additionally, teachers' perceived autonomy was found to support students' academic adjustment within institutional settings.

The student-teacher relationship, emotional and interpersonal commitment, and autonomy predict satisfaction of psychological needs (Lyness et al., 2013). Kritikou and Giovazolias (2022) examined academic environmental factors related to college students' emotion regulation, academic flourishing, and academic adjustment within the framework of self-determination theory, incorporating the emerging third wave of positive psychology. In line with this third wave, SDT already emphasizes the importance of the learning environment as a key factor in individual success. An autonomy-supportive environment—characterized by perspective-taking, demonstrating importance, and providing opportunities for choice and self-regulation was essential for creating a positive learning environment where students can thrive. The student-teacher relationship, opportunities to interact with faculty, personal feedback, recognition of emotions, interpersonal commitment, and student autonomy all predict psychological needs satisfaction (Lyness et al., 2013).

The validity of SDT as a relevant framework for completing a doctorate is supported by these studies (De Clercq et al., 2019; Devos et al., 2017; Litalien et al., 2015). Specifically, it was found that the three different types of supervisor support influenced the key predictors of doctorate completion for each student (Le et al., 2021). The study by Ryan and Deci (2017) identified a positive relationship between students' perceived autonomy support from their contact teacher, perceived competence, autonomous self-regulation, and perceived school

performance. The research showed that the link between autonomy support and perceived school performance was partly mediated by autonomous self-regulation. Additionally, the connection between need satisfaction and perceived school performance was fully mediated by autonomous self-regulation. The study concluded that autonomous self-regulation and perceived competence are positively related to perceived school performance. The model explained 32% of the variance in students' perceived school performance.

In summary, multiple researchers (De Clercq et al., 2021; Howard et al., 2021; Litalien et al., 2019; Shin & Bolkan, 2021) have argued that SDT provides a rich framework for understanding the complex nature of doctoral students' motivational experiences and their satisfaction in higher education. Recent literature highlights SDT as an appropriate framework for examining doctoral students' motivational factors (Absellatif, 2022; Chen et al., 2023; De Clercq et al., 2021; Kritikou and Giovazolias, 2022; Zak-Moskal & Garrison, 2020). Several authors (Maroco et al., 2020; Ryan & Daci, 2020; Shin & Bolkan, 2021; Tóth-Király et al., 2020) have indicated that SDT can offer a comprehensive framework for identifying doctoral students' intrinsic and extrinsic motivations in academic settings, as well as factors that may differ across motivations, stages, and environments, influencing persistence.

Predictors of non-completion

The factors influencing non-completion in various doctoral programs depend on each student's unique circumstances, such as employment, family status, marriage, having children or being a single parent, financial stability, and diverse backgrounds (Johson, 2020). These factors may affect students' persistence (Johnson, 2020). Additionally, the limitations of quantitative, qualitative, and mixed-methods research reveal a failure to thoroughly investigate the underlying factors that influence doctoral students' persistence and productivity. The lived experiences of

doctoral students during the completion process across different programs and stages within educational institutions remain underexplored (De Clercq et al., 2021; Lehan et al., 2021). De Clercq et al. (2021) suggested interviewing doctoral students from varied backgrounds, including different disciplines, academic institutions, and stages of the completion process, to gain better insights into their perspectives on motivation, persistence, productivity, and success at various points throughout their doctoral journeys. This approach also aims to understand how motivation supports students in continuing their studies. Past research has examined how personal characteristics, including situational, academic, and demographic factors, influence doctoral student persistence, highlighting potential risks of non-completion (Devos et al., 2021). According to Kennedy et al. (2015), dropout from doctoral programs is often linked to barriers that hinder dissertation completion.

Achievement and dropout are not outcomes of chance; instead, they reflect doctoral students' self-determination and effort (Wollast et al., 2018): those who are motivated to achieve goals and those who choose to drop out (Tayebi et al., 2021). Over the past decade, doctoral students have faced numerous challenges in attaining their degrees, including the decision to drop out (Hamilton, 2023). Several studies have employed diverse methodologies to examine and measure the factors influencing doctoral students' potential (De Clercq et al., 2021; Howard et al., 2021; Litalien et al., 2019; Shin & Bolkan, 2021). In a demanding work environment, doctoral students must balance professional and personal commitments, and the pressure of completing their studies while managing multiple tasks, such as learning, research projects, and professional development, can affect their success (Hammoudi et al., 2023).

Various factors in the literature review influence doctoral students' persistence in online programs. These factors include perceptions of work and support, challenges, academic advising,

student characteristics, experiences, integration and institutional factors, technological and relational factors, multiple identities, information perception and focus, age, gender, ethnicity, learning style, brain hemispheric preference, lived experiences, connectedness, and community development. Additionally, the literature indicates that online doctoral students may face a higher risk of not completing their program compared to traditional face-to-face programs (Alarifi & Song, 2024; Rockinson-Szapkiw et al., 2016; Terrell et al., 2016), and that factors related to online doctoral student persistence involve interactions of multiple elements related to both students and institutions (Spaulding & Rockinson-Szapkiw, 2017). The review also suggests that only a few student-related characteristics, such as leadership and motivation, are statistically significantly associated with persistence in online doctoral programs (Lederman, 2019). Lastly, it emphasizes the importance of students' sense of community, positive interactions with others, and program and institutional characteristics in supporting persistence (Akojie et al., 2019; Cockrell & Shelley). Future research should focus on replicating previous findings, studying fully online students, exploring external and informal support systems, investigating the impact of caregiving, examining academic factors, and exploring other elements such as learning outcomes and time to completion (Lehan et al., 2021).

The literature does not explicitly identify the factors that predict non-completion among doctoral students. However, it notes that online doctoral students may face a higher risk of not completing their programs than traditional face-to-face students (Alarifi & Song, 2024; Rockinson-Szapkiw et al., 2016; Terrell et al., 2016). It also indicates that factors influencing online doctoral student persistence involve multiple elements related to both students and the institution. Therefore, one can infer that some predictors of non-completion include a lack of integration and a sense of community. If doctoral students do not feel connected to their

academic community or lack support from peers and faculty, they are more likely to drop out of their program. Insufficient academic advising, career services, library resources, and other support systems can hinder students' progress and contribute to non-completion (Rockinson-Szapkiw et al., 2016; Ivankova & Stick, 2007). Additionally, poorly designed curriculum and instruction or feeling overwhelmed by the program's demands can lead to higher dropout rates. Financial difficulties, family responsibilities, work commitments, and personal disruptions also affect a student's ability to persist in their doctoral studies. Moreover, if students lack strong motivation or confidence in their ability to succeed, they may be more inclined to discontinue their studies. These factors are speculative and not explicitly discussed in the literature. Speculative factors not explicitly mentioned include age, disability, gender, race/ethnicity, nationality, socioeconomic status, sexual orientation, physical appearance, and pregnancy (Choi et al., 2021).

In summary, the literature discusses various factors that can predict non-completion in doctoral programs, emphasizing students' unique situations, including employment, family status, financial stability, and diverse backgrounds. It notes that individual characteristics, academic factors, and demographics can impact the persistence and productivity of doctoral students. The literature also highlights the challenges doctoral students face, the importance of motivation and self-determination in achieving goals, and the impact of factors such as academic advising, support services, curriculum design, and personal circumstances on completion rates.

Additionally, it highlights that online doctoral students may face a greater risk of not completing their programs compared to those in traditional settings, with factors such as a lack of integration, community support, and motivation playing significant roles. The literature emphasizes the need for further research to examine the factors influencing doctoral student

persistence, including caregiving responsibilities, academic variables, and learning outcomes. As explicitly noted, the factors affecting doctoral students' persistence include both personal characteristics and situational, academic, and demographic factors that can impact their likelihood of completing their studies.

Achievement and dropout rates in doctoral programs are linked to students' motivation to achieve goals and their decision to leave the program. Motivated students who are committed to success are more likely to persist. Academic support services, such as advising, career services, library resources, and other support systems, can hinder students' progress and lead to non-completion if they are insufficient. Curriculum design and program demand also play a role: if the curriculum is poorly designed or students feel overwhelmed, they may be more prone to dropping out. Personal circumstances, such as financial difficulties, family responsibilities, work commitments, and disruptions, can also affect a student's ability to continue their doctoral studies. Furthermore, a lack of integration and community support can increase the risk of dropout if students do not feel connected to their academic community or lack encouragement from peers and faculty. Online program challenges may further contribute to non-completion, as online doctoral students often face higher risks than those in traditional face-to-face programs due to limited community support, integration, and motivation. These factors are crucial in shaping doctoral students' persistence throughout their academic journey.

Persistence

Persistence is the "voluntary continuation of a goal-directed action despite obstacles, difficulties, or discouragement" (Peterson & Seligman, 2004, p. 229). Factors influencing whether students complete various doctoral programs include their circumstances, such as employment, family status, marital status, parenthood, financial stability, and diverse

backgrounds (Johson, 2020). These predictors of non-completion can affect students' persistence (Johnson, 2020). Research on persistence has shown that talent or ability is not the primary determinant of success; instead, these factors are what researchers identify as crucial for achievement (Choi et al., 2021; Chrisholm-Burns et al., 2021; Devos et al., 2021; McWilliams & Shields, 2022; Nicle & DeBoer, 2020; Shaikh & Asif, 2022; Sverdlik & Hall, 2020; Winterer et al., 2020; Yang & Cai, 2022; Zhangen et al., 2022).

Researchers and academic institutions have invested considerable effort into developing theories to explain student retention, often taking a university-centric approach (Tinto, 2017). Tinto attributes the responsibility for doctoral students' retention to the universities. Consequently, it is understandable that universities prioritize retention, as higher retention yields positive outcomes, including increased revenue and other benefits. However, when engaging with students and viewing retention from their perspective, universities are not the central focus of discussion about remaining enrolled. Instead of emphasizing staying enrolled, students are more concerned with completing their degree, even if that means transferring to another school or pursuing a lower-level credential. These views are particularly important for doctoral students and are essential to university efforts to enhance retention and graduation rates, especially for historically underrepresented students in higher education (Tinto, 2017).

On the other hand, researchers and academic institutions explore the term persistence and what it means when students use it. Persistence, or the continued effort despite difficulties, is closely related to motivation (Tinto, 2017). Perseverance enables individuals to continue working toward a goal despite obstacles. It requires students to be committed to finishing their degrees and to put in significant, challenging effort. Universities should consider what actions they can take to retain students and influence their commitment to staying, persevering, and

earning their college degrees. The first step, as Tinto (2017) suggests in addressing this question, involves researchers understanding the factors that influence student motivation and identifying which the university can potentially influence. Instead of diving into a broad discussion on student motivation theory, Tinto (2017) recommends focusing on specific aspects of student motivation, including student self-efficacy, sense of belonging, and perceived value of the curriculum.

Persistence in literature is characterized by overcoming obstacles to achieve a goal while completing a task (Howard & Crayne, 2019). Some scholars and researchers have observed individuals who consistently pursue their goals. As a result, Howard and Crayne (2019) conducted a study. They developed a multi-dimensional scale to assess three aspects of persistence, which could help identify characteristics associated with persistence. These three dimensions were inappropriate persistence (IP), persisting despite fear (PDF), and persisting despite difficulty (PDD). In the first study, Howard and Crayne (2019) measured various aspects of persistence, including the persistence scale, perseverance, courage, and grit, and evaluated this concept. The findings demonstrated that the three proposed dimensions and the distinct construct of goal-time preference (GTP) were identifiable. Based on these findings, the Multidimensional Persistence Scale (MPS) was developed. In the second study, they refined an over-represented item list to create the first three-dimensional MPS and a GTP scale. Study 3 showed that the measure did not unintentionally assess GTP, further reduced the MPS, and supported its factor structure. Additionally, this study confirmed the MPS's convergent validity. In Study 4, a working sample confirmed the MPS’s structure. All four studies provided evidence for the existence of PDD, PDF, and IP, as well as the psychometric qualities of the MPS. Finally, they re-examined the usefulness of persistence in achieving personal and organizational goals. In

Study 5, the relationship among three aspects of persistence — expectations, life satisfaction, and psychological well-being — was evaluated. In Study 6, researchers found that while PDD alone was associated with OCBs, PDD and PDF were both associated with conscientiousness. However, no persistence dimension was linked to voice or performance. These findings suggest that PDD may benefit organizations, persistence may be crucial for an individual's well-being, and PDF and IP may not influence a company's performance. Additionally, some of these studies (Ellett et al., 2007; Grant, 2008; Rainfall, 2004) specifically examined persistence-related organizational outcomes, such as overtime worked. General organizational outcomes are not predicted by persistence; only particular outcomes relevant to the organization may be. These recommendations are reasonable given the circumstances; however, further research is still needed.

In organizations, a study by Howard and Crayne (2019) found that persistence reflects an individual's ability to overcome difficulties and achieve their goals. The current entrepreneurial environment encourages people to face significant business challenges, and their persistence is consistently seen as a key factor in success (Howard & Crayne, 2019). It is important, both academically and practically, to measure persistence and understand its outcomes. Many concepts related to persistence have been introduced, and their definitions often share similarities, despite the widespread interest in persistence, which has led to numerous findings. These concepts include grit, tenacity, perseverance, conscientiousness, determination, goal pursuit, commitment to goals, work dedication, need for achievement, self-discipline, ambition, courage, enthusiasm, passion, work ethic, reliability, and diligence (Lynn, 1989; Duckworth et al., 2007; Grant, 2008; Howard & Alipour, 2014; Klein et al., 2001; Locke, 1996; Vancouver et al., 2010).

The two constructions are often viewed as separate, but there are cases where they can be used interchangeably. For example, grit (a combination of perseverance and passion) has sometimes been used to define achievement beyond mere achievement (Duckworth et al., 2007, p. 1087). The main concerns of researchers regarding doctoral students relate to their ability to persist in completing their studies, engaging in activities, or working on the same project for an extended period (such as coursework, dissertations/thesis), and their capacity to persist in a project, task, or exercise despite challenges (Fiore et al., 2019). In 2017, Tinto described persistence as a motivated state for students, influenced by a sense of belonging, self-efficacy, and the perceived value of their studies. While these factors may not be explicitly tied to higher education institutions, they are unique to each doctoral student, as noted by De Clercq et al. (2021). However, these factors are specific to each doctoral student. Understanding doctoral students' persistence differs from the traditional persistence seen among higher education students (Peltonen et al., 2023; Rockinson-Szapkiw et al., 2016).

The completion rate of doctoral students in online programs is reported to be 10% to 20% higher than that of students in traditional face-to-face university programs (Peltonen et al., 2023). In a study by Rockinson-Szapkiw et al. (2016), archival data from 148 applicants were analyzed to develop an online PhD persistence model by combining existing attrition models from the works of Tinto (1975, 1993) and Bean and Metzler (1985) in the empirical literature. The aim of the study by Lehan et al., 2021, was to explore the impact of institutional factors—such as academic programs, financial support, support services, instructions, and curriculum—as well as mixed variables like family, economic, social, and academic support staff relationships, in differentiating between doctoral students who persist and those who withdraw during the dissertation process. They used a predictive correlation design and logistic regression to uncover

trends. The results showed that the model incorporating institutional and mixed variables strongly predicted whether online doctoral or PhD candidates would progress to the candidacy stage (Willess, 2023). Factors such as academic, faculty-social, family integration, academic programs, support services, instruction, and curriculum quality independently explained the likelihood of online doctoral persistence (Lehan et al., 2021).

When considered independently, social integration, economic integration, and financial support did not significantly contribute to explaining persistence (Rockinson-Szapkiw et al., 2016). Dissertations are typically required for doctoral degrees and culminate in students' research and scholarly work, thereby increasing completion rates. A study by Sverdlik et al. (2018) emphasized the importance of writing skills and academic identity, both of which may be relevant to successful study completion. Additionally, the literature suggested that future research must explore the impact of various factors on doctoral student development and persistence, including those related to the dissertation process. Another study by Donohue et al. (2021) examined factors affecting all phases of doctoral studies, except the dissertation phase (ABD), including time management, research design and methodology, access to resources, advisor support and guidance, workload and competing responsibilities, mental health and well-being, and financial constraints. The study found that the pandemic (COVID-19) significantly impacted the progress of doctoral students' culminating projects, with most respondents reporting some degree of impact. However, some respondents also reported benefits like improved access to participants and resources, increased flexibility in work arrangements, and opportunities for self-reflection and personal growth. The authors emphasized that institutions should have contingency plans in place to support doctoral students during crises, prioritizing their well-being and progress.

A study by O'Connor et al. (2022) investigated the writing beliefs, practices, and help-seeking behaviors of graduate students at Oakland University, employing a mixed-methods approach. It also examined how the university's writing center programming addresses these needs. The study aimed to deepen the understanding of graduate students at the university, better serve them, and contribute to existing research on graduate students and writing center programs. Because the attrition rate for graduate students in Doctor of Philosophy (PhD) programs varies widely by institution and field of study, it is recognized that attrition rates in PhD programs tend to be higher than in other graduate programs. According to a Council of Graduate Schools report, the average attrition rate for PhD programs in the United States is around 50%. Half of the students who enter a PhD program do not complete it or earn their doctoral degree. It is essential to recognize that factors such as program quality, funding, mentorship, and personal circumstances can significantly impact attrition rates. ABD (All but Dissertation) refers to graduate students who have completed all requirements for their doctoral program, including coursework and comprehensive exams, but have not yet finished their dissertation. The attrition rate for ABD students can vary by institution and field and tends to be higher than for students who have not reached the ABD stage. Challenges such as funding shortages, limited support, personal issues, and difficulties managing dissertation demands can contribute to ABD attrition. However, data on ABD attrition rates may be limited, as they are not consistently reported or tracked across institutions (O'Connor et al., 2022). The study also found that graduate students felt supported by their supervisors but had limited opportunities for writing-specific assistance within their departments. Students reported struggling to find time to write and sought help from the writing center when departmental and advisor support did not meet their needs. Graduate

students who participated in writing center programs found them helpful and reported that they enhanced their success.

In a different study, Xavier and Meneses (2022) examined the persistence and experiences of doctoral students in an online learning environment. Their research focused on first-year learners in an open online university, specifically examining their perceptions of time challenges and how these perceptions affect their persistence. The challenges faced included pressure from studies and other commitments, making it difficult to allocate enough time to coursework and meet deadlines. Many first-year students juggle multiple responsibilities, such as work, family, and personal obligations. Doctoral students, in particular, find it challenging to balance these commitments with their studies, necessitating effective time management, prioritization, and conflict resolution between study time and other activities. Some students reported difficulty prioritizing tasks, meeting deadlines, and maintaining a consistent study routine. Inexperience with online learning environments may also require time to adapt to new technology, tools, and expectations. Additionally, some first-year students may have unrealistic expectations about the workload, time demands, and the self-directed nature of online higher education, which can lead to difficulties in managing their time and fulfilling course requirements. A lack of support from institutions, instructors, or peers can further hinder students' ability to navigate online environments and overcome time-related challenges. It is essential to acknowledge that these challenges can vary based on individual factors, including age, enrollment status, and prior online learning experience. The study found that time pressure and conflicts were significant barriers to success during the first year of online higher education. Managing multiple priorities was identified as the primary challenge; however, many students who persisted demonstrated strong time management skills and high levels of intrinsic

motivation, satisfaction, and self-determination. Even students who procrastinated and had heavy work and family commitments persevered, thanks to their resilience and personal motivation. Based on these findings, the study recommends strategies such as providing time management support, motivational resources, resilience-building interventions, personalized assistance, and improved communication to encourage persistence. For future research, it is suggested to explore the experiences of first-year learners across different online higher education settings and programs, conduct longitudinal studies on the long-term effects of time challenges, and investigate how the pandemic has influenced time management difficulties and experiences among first-year students.

Although none of the participants had prior experience, the academic success of doctoral students in their first semester was influenced by online learning, as indicated by Greenland and Moore (2021). The literature shows that most doctoral and Ph.D. students enrolled in online programs because the flexibility of these programs was a key factor for many students (Lehan et al., 2021). Among 82 participants, 27% reported limited free time for leisure and other obligations (Photopoulos et al., 2023). Online learning enables some students to continue their studies despite the challenges associated with distance education, work, and family responsibilities (Lehan et al., 2021). However, misconceptions about the time and workload needed for doctoral studies among non-traditional or part-time learners significantly contributed to early dropouts (Henry, 2018). According to Dews-Farrar (2018), some doctoral students faced difficulties transitioning from undergraduate to graduate studies in a traditional, face-to-face setting, as they needed to adapt to a new learning environment that required significant time. On the other hand, feeling comfortable in an online environment emerged as a crucial factor in students' persistence in virtual learning (Xavier & Meneses, 2022). Students with previous

campus experience could develop strategies for self-regulated learning and appreciate the benefits of online platforms and collaboration in staying committed (Lehan et al., 2021). Conversely, students who initially struggled to adjust to online learning often fell behind, had difficulty managing their time, and faced challenges with the range of technologies available in online courses (Lee et al., 2024). Despite these challenges and the risk of dropping out after completing the first semester of doctoral programs, students face various obstacles. Depending on their individual characteristics, they need different types of support and resources to navigate their academic path successfully (Lee et al., 2024). Each doctoral student has a unique experience with their studies.

Various challenges and experiences mark the academic journey of doctoral students, but they require a purposeful, meaningful, and empowering foundation throughout their path (Kaur et al., 2022). They must stay motivated and persistent to succeed, as highlighted by Kaur et al. (2022). Through a literature review, I found that multiple factors influence doctoral students' persistence, which can help predict potential dropouts (Greenland & Moore, 2021). These factors include aspects related to distance education dropout, such as gender (male students are more likely to drop out than females), income (students with higher income levels are more likely to drop out), distance (students living farther from the pole tend to drop out more often), frequency (more frequent visits to the pole increase dropout likelihood), agreement with academic aspects (greater agreement with the adequacy of academic factors reduces dropout risk), technological difficulties (fewer technological issues decrease dropout chances), and non-academic factors (adequacy of infrastructure, equipment, and hub functionality increases dropout likelihood). However, the variation in dropout due to non-academic factors was much smaller than that due to distance and frequency of visits and face-to-face activities (increased face-to-face meetings

have a more significant impact on dropout rates than the physical conditions of the school). According to the authors, these factors were identified using survival function analysis, factorial analysis, and logistic regression. The research instrument included variables such as gender, age, income, course, distance from the pole, frequency of visits, and agreement with various aspects of the course. Data analysis employed exploratory factor analysis, hypothesis testing, and logistic regression to investigate relationships among the variables and dropout.

Furthermore, even doctoral/Ph.D. Students who faced significant workloads succeeded through effective time management and adeptly tackling challenges (Hart, 2012). Motivation and satisfaction drive persistence and success, allowing learners to employ self-regulating strategies under time constraints (Veletsianos et al., 2021). Students who often face heavy time pressure due to work-family responsibilities and the need to complete assignments promptly have reported that they enhance their skills under pressure, pass their courses, and persevere (Xavier & Meneses, 2022). Despite this, many students hurry to finish their assignments at the last minute, are motivated by deadlines, and often delay studying (Veletsiano et al., 2021). In academic discussions, these approaches are often associated with unsuccessful outcomes and students dropping out of their programs (Veletsianos et al., 2021). On the other hand, doctoral candidates who demonstrate perseverance remain driven in the face of obstacles and are determined to persist in their studies (Xavier & Meneses, 2022). Despite the challenges, they persist and complete their work, ensuring students experience a sense of achievement and motivation (Lee et al., 2019). Doctoral candidates identify various needs to help them establish a sense of purpose, find motivation, receive support, and maintain their commitment, all of which are essential to their continued progress in doctoral studies (Hudson et al., 2020). Some students

clearly understand their academic objectives, feel empowered, and have a strong network of supporters who help them reach their educational targets.

In a study reflecting on student persistence, Tinto (2017) emphasized the significance of personalized support from academic institutions in fostering student persistence. Though doctoral students are willing to contribute to completion and retention rates, academic institutions must prioritize creating an environment where students feel nurtured and supported and can form positive relationships (Lehan et al., 2021). The active and enthusiastic alignment of doctoral programs with students' expectations is crucial, especially for those attending either online universities or traditional face-to-face settings (Lehan et al., 2021). Students engaged in online learning may encounter difficulties and feelings of isolation in keeping pace with their studies, which can potentially lead to a loss of interest (Hwang et al., 2015). Some academic institutions require students to participate in group learning. Long-term group participation in doctoral programs is not ideal as it hinders the development of a support network among students and their peers (Ames et al., 2018). Doctoral/Ph.D. students can benefit from academic support, which can take various forms. For example, some students require acknowledgment and motivation from their supervisor (Kaur et al., 2022), which plays a significant role in helping them persist even when they are feeling low or anxious (Cunnigham et al., 2021). Additionally, other valuable resources include social networks and peer relationships (Mishra, 2020), as well as support from family, friends, peers, and activities to help students stay focused (Mishra, 2020), all of which contribute to building self-efficacy and developing writing skills for academic publications (Panadero et al., 2023). Lee (2021) emphasizes the importance of support that maintains an academic tone. Doctoral students are supported in their academic journey by another factor, which involves developing their identities (Zhao & Jia, 2020). In 2021 research,

Choi and colleagues defined professional identity as the personal connection of an individual with a profession that requires specialized knowledge, skills, values, activities, and norms. They examined identity development as an academician among those enrolled in doctoral programs in educational sciences as a distinct form of professional identity with scholarly communities engaged in academic discipline research. This aids their persistence by monitoring the impact of their research, increasing the visibility of their research efforts, and combining all their contributions over time. A researcher's identity is formed by consolidating all research outputs (such as articles, books, datasets, conference proceedings, and blog posts) and their influence, which can be aligned with or function as an author profile.

Based on the literature on persistence that I reviewed, it was discussed that persistence plays a critical role in the completion rates of doctoral students. Every one of the ten studies chosen for review, along with various references within those studies, emphasized the influence of both intrinsic and extrinsic motivational factors on doctoral students' persistence in finishing their studies. Doctoral students' decision-making and persistence are affected by motivational, institutional, social, demographic, gender, and diversity factors. Most studies examine the distinctions between traditional (face-to-face) and online learning. The consistent conclusions in the literature indicate that students who demonstrate exceptional effort exhibit perseverance and accomplishment due to effective time management and the ability to manage obstacles effectively. According to De Clercq et al. (2021), diverse motivations and satisfaction are the primary factors driving perseverance and achievement. Motivated learning facilitates self-regulating strategies for maintaining persistence, even when facing time constraints (Veletsianos et al., 2021). The key strength of this body of literature is that doctoral/PhD students successfully finish their coursework without encountering significant challenges. However, most students

encounter difficulties during their extensive research project dissertation, and the completion rate remains uncertain (De Clercq et al., 2021; Locke & Boyle, 2016).

In summary, the literature discusses the concept of persistence among doctoral students, emphasizing the factors that influence their completion rates and retention in doctoral programs. It highlights the importance of motivation, self-efficacy, and support in encouraging student persistence. The literature also examines the differences between traditional face-to-face and online doctoral programs, noting that online programs often have higher completion rates. Various studies and researchers have explored the impact of factors such as personal circumstances, institutional support, academic challenges, and social integration on the persistence of doctoral students. Additionally, the literature addresses the challenges faced by doctoral students, the importance of personalized support from academic institutions, and the role of motivation and satisfaction in promoting student success and perseverance. Key strategies to foster persistence in online higher education, as outlined in the literature, include providing personalized support: Academic institutions should focus on creating an environment where students feel nurtured and supported, and on building positive relationships that help students stay committed to their studies. Aligning programs with student expectations: Ensuring that doctoral programs actively and enthusiastically align with students' expectations, whether in online universities or traditional face-to-face settings, can improve student engagement and persistence. Offering academic support: Students benefit from various types of academic support, such as encouragement and motivation from supervisors, social networks, peer relationships, and assistance from family and friends, which help build self-efficacy and develop writing skills for academic publications. Developing professional identity: Encouraging professional identity development among doctoral students can aid their persistence by allowing

them to see the impact of their research, increasing the visibility of their efforts, and aligning their contributions with scholarly communities involved in academic discipline research.

Enhancing time management skills: Effective time management is essential for online learners to balance their academic work with employment, family responsibilities, and other commitments. It helps them meet deadlines and stay committed to their studies. Providing motivational support: Motivation and satisfaction play key roles in encouraging perseverance and achievement among doctoral students. They foster self-regulating strategies that help maintain persistence even when facing time constraints. Improving communication and interaction: Better communication and interactions among students, instructors, and support services enable students to navigate the online learning environment more successfully, overcome challenges, and stay motivated to learn. By adopting these strategies, academic institutions can build a supportive and engaging online learning environment that encourages student persistence and success in higher education.

The literature examines factors that influence the persistence of doctoral students, including personal circumstances. Factors such as employment, family status, marital status, parenthood, and financial stability can affect a doctoral student's ability to continue their studies. Institutional support: The extent of assistance provided by academic institutions, including programs, financial aid, support services, instruction, and curriculum quality, can influence doctoral student persistence. Academic challenges: Difficulties with coursework, dissertations/thesis, and research projects can affect doctoral students' ability to stay in their programs. Social integration: The degree to which doctoral students are socially connected within their academic community can significantly influence their persistence. Motivation and satisfaction: Factors related to motivation, satisfaction, self-efficacy, and perceived value of the

curriculum can influence doctoral students' persistence. Time management: Developing practical time management skills is crucial for doctoral students to balance their academic responsibilities with other commitments and meet deadlines, which can significantly impact their ability to persist in their studies. Support systems: Support from supervisors, peers, family, and friends, as well as access to academic resources and writing support, can play a significant role in fostering doctoral student persistence. Professional identity development: Building a professional identity and engaging with scholarly communities can help doctoral students stay committed by tracking their research impact and aligning their contributions over time. By addressing these factors and providing suitable support and resources, academic institutions can help doctoral students overcome challenges and continue their studies successfully.

Motivational Factors

Motivation, or the lack thereof, is often emphasized in academic literature as a key factor influencing the persistence of doctoral students (Bekova, 2021; Choe & Borrego, 2020; Jaksztat et al., 2021; McGray & Joseph-Richard, 2020; Rooij et al., 2021). Several researchers (Bouhrira & Cruz, 2021; Collier & Blanchard, 2023; De Clercq et al., 2021; Lehan et al., 2021) have explored motivation in higher education from a meaningful perspective, identifying both intrinsic and extrinsic motivational factors as reasons for pursuing a doctoral degree. Some researchers have investigated motivational issues among PhD students (Badali et al., 2022; Skopek et al., 2022; Sverdlik & Hall, 2020).

Motivational elements that originate from within include an appreciation for intellectual abilities (Evans et al., 2020; Whitcomb & Singh, 2021), a strong interest in the program (Austin, 2002; Brailsford, 2010; Xavier & Meneses, 2020), and a drive to gain research experience (De Clercq et al., 2021; Sverdlik & Hall, 2020) or personal growth (Aina et al., 2022). External

factors identified in the literature as motivators for doctoral students include employment opportunities (Bekova, 2021) and the desire for prestige associated with earning a doctoral degree (Rooij et al., 2021; Trent et al., 2021). Furthermore, research findings show that external social elements such as support from family members during the pursuit of a doctoral degree (Badali et al., 2020; Tayebi et al., 2021), professional integration as academics (McGee et al., 2022; Xavier & Hall, 2020), collaborative learning efforts (Xavier & Hall, 2020), and compatibility with a doctoral supervisor or chairperson (De Clercq et al., 2021; Rooij et al., 2021) can influence doctoral students' motivation.

A study with 422 doctoral students found that those who successfully earned their doctorate felt more confident and capable in the academic setting, including faculty, supervisors, and peer support, compared to those who did not complete their studies (Lehan et al., 2021). This suggests that students who felt their need for competence and relatedness were met were more likely to be satisfied and finish their degrees. Litalien and Guay (2015) conducted a study with 1060 students, showing that intrinsic motivational factors such as autonomy, relatedness, and competence significantly influenced students to complete their programs, while extrinsic factors like financial support helped reduce dropout intentions. Moreover, the findings indicated that doctoral students felt most competent when they perceived dedicated support from their supervisors or chairs for their academic success. The research provided empirical evidence of the benefits of internal and external motivational factors that address doctoral students' basic psychological needs for autonomy, connectedness, and proficiency.

Maintaining motivation during a doctoral program can be challenging, as it is influenced by internal and external factors unique to each student (Sverdlik & Hall, 2020). These motivational factors create obstacles in the daily academic lives of doctoral students, especially

during significant transitions. Postgraduate students set intrinsic motivational factors and challenges for themselves, and overcoming these is closely linked to the confidence they develop throughout their doctoral journey (De Clercq et al., 2021). Lee (2020) states that persistence is a key indicator of the success of doctoral programs, academic institutions, and students. The program's success depends on both the institution and the doctoral student. Persistence requires confidence and determination, pushing individuals to face a range of intrinsic and extrinsic challenges. As they navigate their academic journey, doctoral students use both intrinsic and extrinsic motivational strategies to adapt to the challenges and obstacles they encounter at different stages of their progress.

According to Sverdlik and Hall (2020), when using intrinsic survival strategies, students need to strengthen their determination and ability to consistently overcome future obstacles, persistently working toward completing their doctoral degree, which they initially pursued for their interests and aspirations. These inherent challenges influence students' determination and confidence. At the same time, students must also rely on external coping mechanisms, such as incentives and personal interest, to engage in discussions with faculty and peers while actively participating in scholarly activities like research, dissertations, revisions, writing, and reading (Sverdlik & Hall, 2020). External challenges are linked to societal influences, where the academic system supports students and enhances their perseverance.

The Hudson et al. (2020) study aimed to foster grit and a growth mindset to improve doctoral students’ persistence in higher education. They applied the grit growth model, focusing on developing personal traits, specifically grit and a growth mindset, to help students complete their doctoral programs. This model highlighted the importance of personal and social responsibility (PSR), flexibility, shame resilience, expectations, engagement, service, personal

loss, religious faith, and passion in promoting doctoral persistence. It also stressed the value of academic and personal relationships and the factors that lead to grit and a growth mindset, supporting a more direct personal development approach to help students persist.

The theories in this study emphasized social integration as key to college persistence, specifically the student development model of doctoral students' persistence and Tinto's theory of college student departure. These theories underscore the importance of social integration, including factors like involvement in campus activities, relationships with peers and faculty, a sense of belonging to the academic community, and personal qualities such as grit and a growth mindset, as well as interactions between individuals and their environment in encouraging student persistence and completion in higher education. The study's findings centered on developing the grit growth model, highlighting personal traits such as grit, a growth mindset, and personal and social responsibility as vital to fostering doctoral persistence. It also highlighted themes such as expectations, engagement, service, personal loss, religious faith, and passion in doctoral students' experiences of completion. The authors recommended that future research incorporate a direct student development approach, implement programmatic strategies to enhance metacognition, promote growth in grit and growth mindset, and further develop the grit growth model for ongoing investigation.

Students' commitment to their goals greatly influences their determination to succeed academically (Hudson et al., 2020). Motivation can be a key factor in helping doctoral students keep going in their efforts to complete their degree. Doctoral students use motivational strategies to overcome the challenges, responsibilities, and requirements they face during different phases of the program and as they work toward finishing their doctoral degree (Sverdlik & Hall, 2020). In summary, research on how motivational factors affect doctoral students' progress has mainly

focused on institutional factors to understand why they continue their studies. Despite extensive research, results vary, making it hard to identify clear patterns or differences.

A study by Aldridge et al. (2023) conducted a targeted review of engineering education literature focused on the retention and persistence of engineering doctoral students from an organizational climate and intersectional perspective. The literature indicates that the strongest evidence was found for environmental motivation (ME), particularly mastery and performance. In a mastery ME, the focus is on self-improvement, increasing competency, learning, and skill development. This ME emphasizes learning, mastering tasks, self-growth, peer equality, and cooperation. Conversely, in a performance-motivational environment (PME), the focus is on demonstrating superiority, making favorable social comparisons, and competing to outperform colleagues. A performance environment (PE) is associated with maladaptive outcomes such as performance anxiety, worry, stress, cheating, seeking easy tasks, and giving up when faced with difficulties. The study also states that ME has been found to predict various employee outcomes, including job engagement, burnout, turnover intention, work performance, incivility, innovation, and hidden knowledge.

In the engineering education literature, there were indications of ME in more than half of the collected research. Examples include collaborating closely with other graduate students, being part of a group of graduate students who provided each other with support and encouragement, bouncing ideas off each other and discussing problems, demonstrating academic competency through comparison with peers, academic gatekeeping, and relationships with faculty, peers attempting to exert authority, and becoming a resource for others (Aldridge et al., 2023). These findings suggest that ME could have significant implications for retaining underrepresented minority and marginalized students in engineering doctoral programs and their

decision to enter the academic workforce. Therefore, based on the literature, mastery and performance environment are specifically crucial factors to consider in understanding the experiences and persistence of engineering doctoral students' retention.

A study by McDowell and Ramos (2023) was a narrative review that examined the preparation and challenges doctoral students face in Australia, focusing on how universities provide support. According to the document, only two-thirds of doctoral students in Australia complete their degrees. The authors described several challenges they experienced during their PhD. One author mentioned that they had no training in philosophy or in working with theory at an advanced level, which is a requirement for their PhD. They felt that the preparation they received for their master's degree was insufficient compared to what was expected of them in their PhD.

Both authors felt lost and overwhelmed at the start of their PhD journey. They struggled to understand different research traditions and methodologies, facing a steep learning curve in grasping complex concepts and theories. One author noted that, aside from generic workshops, there was no formal way to learn how to apply the theory. They had to rely on their own efforts to learn research methods and techniques. Both authors faced financial difficulties during their PhDs, juggling multiple casual teaching contracts and private tutoring to support themselves. The demands of the PhD strained their work-life balance, and they described experiencing stress, anxiety, and feelings of inadequacy. They mentioned the pressure to meet expectations, fear of failure, and the emotional toll of navigating the doctoral process. The authors emphasized the importance of having a supportive community of peers and mentors, highlighting the value of connecting with like-minded individuals to discuss and unpack complex theories and ideas. It's important to note that these challenges are specific to their experiences and may vary for others

pursuing a PhD. However, studies show that motivation is crucial for pursuing and completing a PhD. They identified various motivations that drive individuals to undertake a PhD, including passion for the subject, personal and career goals, intellectual curiosity, desire for personal growth, and external support and resources. Motivation can fluctuate during the doctoral journey, but maintaining a strong sense of purpose and staying motivated can help ensure successful completion.

Motivational factors such as intrinsic motivation, clear goals, support, perceived competence, autonomy, and external recognition play a significant role in doctoral students' persistence. A study by Collier and Blandard (2023) aimed to understand the factors that support or inhibit graduate student success, focusing on underrepresented minorities, females in STEM, and first-generation college students. The factors examined that influence graduate student success include financial support, sense of belonging, mentor relationships, imposter syndrome, microaggressions, access to opportunities, and the intersectionality of race and gender. Other factors included faculty feedback, feelings of isolation, micro-affirmations, and opportunities to write papers for publication. Addressing these factors is crucial to promoting graduate student success. Recommendations include raising awareness among faculty and administrators, providing mentorship programs, offering financial planning counseling, increasing financial support, and creating professional development opportunities.

Motivation can significantly influence the success of graduate students. However, Steinmayr et al. (2019) highlighted some key motivation-related factors, such as intrinsically motivated graduate students' genuine interest and passion for their field. They are driven by personal satisfaction, curiosity, and a desire for intellectual growth. Extrinsic motivators, such as rewards, recognition, and career prospects, can also influence graduate student motivation.

Graduate students with a strong goal orientation tend to be more motivated and focused, setting clear, specific, and challenging goals. Additionally, students with high self-efficacy are more likely to be motivated, set ambitious goals, and persist in the face of challenges. Furthermore, giving graduate students autonomy and control over their research projects, coursework, and career decisions can boost their motivation.

A supportive and nurturing environment is essential for motivating graduate students. This includes access to mentors, advisors, and peers who offer guidance, encouragement, and constructive feedback. Balancing the demands of graduate studies with personal life is vital for maintaining motivation and well-being. To boost motivation among graduate students, institutions and advisors should foster intrinsic motivation, goal setting, self-efficacy, autonomy, and support. This can be achieved by creating an inclusive and supportive environment, providing mentorship programs, offering research and professional development opportunities, and recognizing student achievements. The authors emphasized that supporting graduate student persistence involves offering mentorship programs, workshops on time management and goal setting, resources for mental health and well-being, and opportunities for networking and collaboration. Fostering a diverse, inclusive academic environment that values diversity and promotes work-life balance can also enhance graduate student persistence, as persistence is key to graduate student success. Collier and Blandard (2023) highlighted important factors related to grit and persistence. Graduate students with grit and resilience are more likely to persevere through challenges and setbacks because they possess a strong work ethic, determination, and the ability to recover from failures. They tend to have supportive relationships, clear goals, effective time management, and self-regulation skills. Doctoral students who can self-regulate their

behaviors, emotions, and motivation are more likely to persist. This includes managing distractions, maintaining focus, and staying motivated despite obstacles or setbacks.

Motivational factors play a crucial role in doctoral students' persistence. They influence how students stay engaged and motivated throughout the long, challenging process of earning a doctorate, driven by intrinsic factors such as curiosity and internal motivation. Believing in their ability to overcome obstacles and reach their research goals strengthens their perseverance. Students who maintain supportive relationships with advisors, mentors, and peers are more likely to persist, as these relationships offer emotional support, guidance, and feedback that boost motivation and help navigate challenges. Additionally, recognizing and rewarding students' achievements can further increase their motivation and persistence. Overall, this study offers insights into the experiences and concerns of doctoral students based on race/ethnicity and gender, emphasizing the importance of addressing these factors to support their success and continued persistence in doctoral programs.

Another study by Nicole and DeBoer (2020) examined the role of motivational factors in doctoral students' persistence in their programs and how, for instance, doctoral students with a strong sense of purpose and clear goals tend to persist. They were motivated to achieve their academic and career hopes, which helped them overcome challenges and setbacks. Doctoral students who believe in their abilities and have confidence in their skills are more likely to persist. They possess a strong sense of self-efficacy, which enables them to face challenges with resilience and determination. Additionally, doctoral students with a genuine passion for their research tend to persist. Their enthusiasm and curiosity drive their motivation to continue their studies, even when faced with obstacles. However, it is important to recognize that motivation alone may not be enough for doctoral students to persist. Other factors, such as mentorship,

work-life balance, access to resources, and a sense of belonging, also play vital roles because motivation is a key force that fuels students' dedication and resolve to overcome challenges and complete their doctoral programs.

In summary, various motivational factors influence doctoral students' persistence in their programs. This chapter highlights both intrinsic and extrinsic motivations, including intellectual curiosity, personal growth, career ambitions, and support from family and mentors. Studies indicate that intrinsic factors like autonomy, competence, and relatedness are essential for students' satisfaction and successful completion. In contrast, extrinsic factors such as financial support and employment opportunities help reduce dropout intentions.

Social integration, supportive academic environments, and personal traits like grit and a growth mindset are crucial for encouraging persistence. Challenges faced by doctoral students, such as financial difficulties, lack of preparation, and emotional stress, are also recognized. Suggestions for improving student success include mentorship programs, financial aid, professional development opportunities, and creating a supportive and inclusive academic atmosphere. Overall, both internal and external motivation significantly influence doctoral students' persistence, with supportive relationships and a positive academic environment being essential for their success.

Institutional Factors

Doctoral students' persistence and completion depend on various factors, including institutional ones. Interacting with internal factors (such as motivation and self-regulation) and external factors (like support services, curriculum, and instruction) is crucial for doctoral students. Many researchers have examined how institutional factors influence doctoral students' persistence. Lehan et al. (2021) and Spaulding and Rockinson-Szapkiw (2012) identified a

correlation between specific characteristics of individual Ph.D./doctoral programs and student persistence. For example, suppose a university offers a Ph.D. program with low tuition. In that case, students might find that the program does not align with their interests, which could affect their persistence in completing it (Breitenbach, 2023). Support services such as library resources, program advising, career guidance, and academic support are vital for the success of both traditional and online doctoral students (De Clercq et al., 2021; Fiore et al., 2019; Lehan et al., 2021; Rockinson-Szapkiw et al., 2016). These services enhance academic reputation, support quality, and improve overall student experiences (Lehan et al., 2021; Ivankova & Stick, 2007). According to Young et al. (2019), some doctoral students may feel overwhelmed by the demands of online courses, program requirements, and the need to balance family and work commitments. Nara et al. (2019) found that university support for students focused on guidance from advisors and instructors. However, online doctoral students reported not consistently receiving sufficient support from academic institutions (Fiore et al., 2019; Terrell et al., 2009). Additionally, inadequate advising and program support were cited as reasons for doctoral students dropping out of their postgraduate programs (Kennedy et al., 2015).

The perseverance and completion of doctoral students' studies depend on several factors, including institutional elements. However, the doctoral student is influenced by various external factors (support services, curriculum, instruction) and internal factors (motivation, self-regulation). Multiple studies have examined institutional factors linked to PhD students' persistence. Factors such as academic reputation, quality support, assistance, and experiences (Lehan et al., 2021; Ivankova & Stick, 2007) are crucial for the success of both traditional and online doctoral students, encompassing library resources, career and academic advising, program-related advising, and academic support (De Clercq et al., 2021; Fiore et al., 2019;

Lehan et al., 2021; Rockinson-Szapkiw et al., 2016). A 2019 study by Nara et al. found that advisers and professors provided most of the extensive university support to students. Nevertheless, online PhD candidates reported experiencing inadequate or inconsistent support from their universities (Fiore et al., 2019; Terrell et al., 2009). According to Kennedy et al. (2015), program support and poor advising were additional reasons cited by doctoral candidates for abandoning their postgraduate degrees.

Additionally, Brown (2017) examined institutional elements that students indicated would have supported or encouraged their success. A recurring theme emerged: the desire for flexibility, which led students to pursue online PhD programs. However, they overlooked some institutions' strong support for traditional programs or disciplines, such as in-person supervisors' availability and willingness to communicate outside regular business hours (Barrot et al., 2021). According to literature from those doctoral students, they struggled with time management and had moderate to poor relationships with faculty when seeking necessary assistance (Aeon et al., 2021). Deshpande (2016) also noted that social isolation was a key deficiency in human connection that hindered perseverance, and some PhD candidates quit their programs for similar reasons (Kennedy et al., 2015). The completion and persistence of doctoral students enrolled full-time were linked in Zahl's (2015) study. Additionally, part-time students perceived emotional challenges due to the unavailability of faculty members, as they aspired to be full-time students. A program by Rockinson-Szapkiw and colleagues (2016) recommended that faculty be assigned to serve as advisors from the start of the program until completion.

According to Lehan et al. (2021), faculty support is vital for doctoral students' academic and social integration into the natural environment and for gaining the essential knowledge and skills at different stages of the completion process. Additionally, institutional technical support is

critical for the success of online postgraduate and doctoral students. Nygaard and Savva (2021) highlighted that computer malfunctions, such as memory loss, freezing, or breakdown, create barriers to student progress. Moreover, Lehan et al. (2021) stressed the importance of the online learning environment for student persistence. Lee and colleagues (2020) further noted that the accessibility and adaptability of available technology are connected to students' achievement.

In summary, the literature examines the role of institutional factors in doctoral students' success and completion rates, including support services, program characteristics, and academic reputation. It also highlights the challenges faced by doctoral students, such as time management issues, financial constraints, and the importance of mentorship and supportive communities. The literature emphasizes the significance of motivation, self-regulation, and institutional support in promoting doctoral students' persistence and success.

The relationship between persistence and success in doctoral programs. Here are some key points about how persistence serves as a valuable metric for evaluating the success of doctoral programs, academic institutions, and students. Success in a doctoral program is connected to the success of both the institution and the doctoral student. Students can use motivational tactics to persevere through challenges, responsibilities, and requirements encountered at different stages of their programs to progress toward earning their degree. Students with a strong sense of purpose, clear goals, confidence in their abilities, and passion for their research are more likely to persist. Motivation, self-regulation, support services, and institutional factors play significant roles in fostering doctoral students' persistence and success. Those who possess grit, resilience, a strong work ethic, determination, and self-regulation skills are more likely to overcome challenges and setbacks. Supportive relationships with advisors, mentors, and peers provide emotional support, guidance, and feedback, boosting motivation and

helping students manage the challenges of the doctoral journey. Recognizing and rewarding students' achievements and progress can further enhance their motivation and persistence.

Institutions can support graduate student persistence by offering mentorship programs, workshops on time management and goal setting, mental health and well-being resources, and opportunities for networking and collaboration. Fostering a supportive, inclusive academic environment that values diversity and promotes work-life balance can improve graduate student persistence, which is essential to their success in doctoral programs. In summary, persistence is a key factor in doctoral students' success, influenced by motivational, institutional, and personal factors that help them overcome challenges and complete their studies.

Curriculum and Instruction

Zahl (2015) found that part-time students felt emotionally challenged by faculty members' availability when they needed advice, which prevented them from pursuing or continuing their desired courses compared to full-time students. Full-time doctoral students were motivated by perseverance, excitement, and a commitment to completing their degree programs. Rockinson-Szapkiw et al. (2016) discussed factors that predict online doctoral students' integration into education programs, including personal factors such as gender, race, age, marital status, and the presence of children, as well as program-related factors such as stages in the doctoral journey, synchronous interactions, cohorts, and orientations. The personal factors influencing online doctoral students' program integration include marital status, as having a supportive spouse can positively affect their integration. The presence of children at home can also affect program integration.

Positive experiences, such as supportive faculty interactions, engaging coursework, and a sense of belonging, can enhance integration, whereas negative experiences, including a lack of

support or discrimination, can hinder it (Araujo Dawson et al., 2022). Gender, race, age, and family responsibilities can also influence integration experiences. The cohort model affects doctoral student integration by fostering community and belonging, providing structured support through shared experiences, facilitating networking opportunities, promoting peer support and collaboration, enriching the learning environment with diverse perspectives, offering mentorship and accountability, creating a supportive space for academic and personal growth, and leading to higher levels of program completion and student satisfaction (Sverdlik et al., 2018).

Lehan et al. (2021) argued that faculty members' support influences the academic environment and socialization processes during their doctoral journeys, as well as the knowledge and skills needed at various stages. Additionally, technical support from institutions is essential for the success of online postgraduate and doctoral students. The challenges faced by doctoral students when computers lose memory, freeze, or stop working were noted as obstacles to student progress (Nygaard & Savva, 2021). Furthermore, Lehan et al. (2021) cited the online learning environment as critical to persistence. Lee and colleagues (2020) added that the ease of use and flexibility of available technology are related to students' success.

Program instruction and curriculum are essential in both traditional and online learning environments for doctoral students' persistence (Lehan et al., 2021; Rockinson-Szapkiw et al., 2016). Furthermore, some students have pointed out that course workload, structure, and challenges influence their persistence as doctoral students (Deshpande, 2016; Lehan et al., 2021). In a study by Spaulding and Rockinson-Szapkiw (2012), several participants noted that their previous coursework prepared them for the challenges of dissertation writing. A similar study by Lehan et al. (2021) emphasized that having high-quality, knowledgeable faculty members can affect success.

Sverdlik and Hall (2020) conducted a study examining whether the doctoral program phase (coursework, comprehensive examination, or dissertation) affected 3004 doctoral students' well-being (stress, depression, program satisfaction, and illness symptoms) and motivation (self-determined motivation and self-efficacy). This means that the class instructor serves as a course hero, leader, and manager for the students. Hernandez et al. (2020) emphasized that the availability of an instructor or facilitator and the timeliness of feedback contribute to students' willingness to receive feedback and to the quality of feedback for adjustments in educational settings, which helps doctoral students overcome challenges related to their disabilities and meet student needs.

Sverdlik and Hall (2020) investigated the relationship between doctoral program phases, such as coursework, comprehensive examination, or dissertation, and student well-being and motivation. Their study of 3,004 doctoral students revealed that well-being indicators (including stress, depression, program satisfaction, and illness symptoms) and motivational factors (such as self-determined motivation and self-efficacy) are influenced by the program stage. A central finding is the significant role of instructors in doctoral students' academic progression. Instructors serve as heroes, leaders, and managers within the course, shaping the learning environment and guiding students through challenges. Hernandez et al. (2020) emphasized that instructor availability and prompt feedback are instrumental in fostering student engagement and facilitating necessary adjustments within educational settings. This support enables doctoral students to navigate difficulties, including those related to disabilities, and better meet academic expectations.

Overall, timely and accessible instructor support contributes to improved adaptation, greater persistence, and enhanced student outcomes throughout the doctoral journey. In 2015,

Hwang et al. found that longer-than-expected supervisor feedback and dissertation responses could positively affect student success. They highlighted the importance of support and mentorship during the dissertation process in existing research. Spaulding and Rockinson-Szapkiw (2012) conducted a study in which doctoral participants pointed out that dissertation-related barriers significantly affect their success.

In summary, various factors affect the persistence and integration of doctoral students, especially in online education programs. Key points include Emotional Challenges and Faculty Availability: Part-time students often face emotional difficulties due to limited faculty availability, which affects their ability to continue their courses more than it does for full-time students. Predictors of Program Integration: Factors such as gender, race, age, marital status, presence of children, and program-related aspects, including stage in the doctoral journey, synchronous interactions, and cohort participation, influence integration. Supportive spouses and a feeling of belonging are essential for successful integration. Doctoral program experiences: Positive interactions with faculty, peers, and coursework improve integration, while negative ones, such as a lack of support or discrimination, hinder it. The cohort model promotes community support and higher program completion rates. Faculty and Technical Support: Faculty and technical support are essential for the success of online doctoral students. Challenges such as technical issues can hinder progress. Curriculum and Instruction: Course workload, structure, and difficulties influence persistence. High-quality faculty and thorough preparation from previous coursework are crucial for success, especially in dissertation writing. Instructor Roles and Feedback: Instructors serve as mediators, leaders, and participants, and their availability and prompt feedback are essential for student success. Support and mentorship during the dissertation process are also emphasized. This sub-section emphasizes the importance

of supportive relationships, meaningful interactions, and well-structured support systems in improving doctoral students' persistence and integration.

Social Factors

Hudson et al. (2020) discussed doctoral students' experiences of relocating or changing residences multiple times, often due to job transfers, military service, or personal circumstances. These frequent moves created challenges in adjusting to new environments, forming social connections, and maintaining stability in their lives. Doctoral students who moved often faced difficulties in adapting to new settings, making and maintaining friendships, adjusting to different schools or communities, and coping with the emotional impact of leaving behind established connections. Frequent moving also made it hard to establish a sense of stability, continuity, and belonging, and to cope with the stress of uprooting and resetting multiple times. Many studies on the social factors impacting doctoral students' persistence have found a link between positive interactions with others, a sense of community, and students' perseverance (Akoji et al., 2019; Hernandez et al., 2020; Hudson et al., 2020; Rockinson-Szapkiw et al., 2016; Terrell et al., 2009). However, some research presents conflicting evidence about relationships with others (Lehan et al., 2021). For example, Fiore et al. (2019) suggested that positive interactions with others are connected to persistence. Zahl (2015) emphasized the importance of social networks and relationships in the academic setting for doctoral students, which can serve as resources during their studies. Having supportive people in online learning environments can foster a sense of community and support student success (Zahl, 2015). Conversely, doctoral students might struggle to build relationships online to form long-term connections with academic peers (Ivankova & Stick, 2007), leading to feelings of isolation and potential dropout (Rockinson-Szapkiw et al., 2016). Students face challenges in developing supportive

relationships due to distance, limited time together, changing cohorts, and competing responsibilities (Rockinson-Szapkiw et al., 2016; Zahl, 2015).

Akoji et al. (2019) conducted a meta-analysis of research on the experiences and perceptions of online doctoral students, highlighting social factors that may influence their success and the obstacles they encounter. They examined the role of doctoral students' cohorts in online learning experiences, including fostering positive peer relationships, providing support and collaboration, building professional networks, creating a sense of community, offering mentoring and guidance, and establishing a supportive environment. These elements enhance the overall learning experience by providing opportunities for networking, mentorship, and collaborative projects, thereby contributing to students' persistence and success in their doctoral programs.

Rockinson-Szapkiw et al. (2016) also discussed social factors that influence online doctoral students in education programs. They used a cohort model to examine how social factors impact doctoral student integration by fostering a sense of belonging, providing structured support through shared experiences, facilitating networking opportunities, promoting peer support and collaboration, enhancing the learning environment with diverse perspectives, offering mentorship and accountability, creating a supportive atmosphere for both academic and personal growth, and contributing to higher levels of program completion and student satisfaction. The study’s findings focus on online doctoral students’ program integration, highlighting the significant predictive value of personal and program factors such as gender, race, cohort participation, and synchronous communication. Future recommendations include conducting broader research, exploring various online programs, utilizing advanced modeling techniques, examining additional personal and program factors, conducting experimental studies,

implementing objective program evaluation measures, and developing interventions based on identified variables. Additionally, the study highlighted the importance of promoting faculty, students, and curriculum integration; supporting students with family responsibilities; encouraging cohort participation; using diverse communication methods; and maintaining ongoing orientation activities. The analysis confirmed the robustness of the chosen parametric analyses. It recommended further exploration of significant correlation coefficients, monitoring assumptions, considering additional variables, implementing interventions based on findings, and conducting longitudinal research.

The positive outcomes of the cohort model included a stronger sense of community, structured support, networking opportunities, collaboration, higher completion rates, and increased student satisfaction (Mauldin et al., 2022). These results lead to recommendations for implementing cohort-based programs, mentorship, collaborative projects, networking, diversity, ongoing evaluation, student feedback, and fostering a supportive academic environment within cohort groups. Doctoral students' cohorts are essential in their academic journey and overall experience by building community, offering peer support, facilitating networking, enhancing the learning environment, promoting accountability, encouraging both academic and personal growth, increasing program completion rates, fostering satisfaction, providing structured support and mentorship, reducing feelings of isolation, improving retention, creating a space to share experiences and ideas, and building professional relationships. They also strengthen academic and social support networks, promote diverse perspectives, and contribute to a positive and enriching educational experience.

Relationships like these are valuable for doctoral students, who often face unique challenges during their studies. Losing or ending these relationships can hinder students'

perseverance (Zahl, 2015). In online learning, some doctoral students have reported that their dissertation work is time-consuming, which can lead to feelings of loneliness and isolation (Fiore et al., 2019). Part-time online doctoral students build support networks within their institutions that help address challenges such as meeting deadlines, cohort changes, remote learning, and managing multiple responsibilities due to limited time (Rockinson-Szapkiw et al., 2016; Sverdlik & Hall, 2020).

In summary, social factors significantly influence doctoral students, particularly those who frequently relocate, for several key reasons. Frequent relocations create difficulties in adapting to new environments, establishing and maintaining social connections, and reaching stability. Positive interactions and a sense of community are key to students' persistence, but forming relationships, particularly in online settings, can be challenging due to distance and time limitations. Cohort models in online programs can foster a sense of belonging, support, and collaboration, enhance the learning experience, and increase program completion rates. However, online doctoral students often experience isolation and struggle to build long-term relationships. Recommendations include encouraging cohort participation, using diverse communication methods, providing mentorship, and ongoing assessment to support students' academic and personal development.

Demographic Factors

Demographic factors such as race, gender, and age can influence both integration and persistence (Young et al., 2019). Academic family integration, a sense of belonging, and social identification are essential for program integration (Lehan et al., 2021). Gender, race, and cohort participation were significant predictors of program engagement (Sverdlik et al., 2018). Conversely, age, marital status, and having children at home were not significant factors.

Doctoral program experiences can influence integration through various elements such as the quality of interactions with faculty and peers, supportive relationships, opportunities for collaboration and networking, exposure to diverse perspectives, inclusive program structures, access to resources and support services, balancing academic and personal responsibilities, and addressing barriers related to diversity and inclusion (Sverdlik et al., 2018).

Rahmani et al. (2024) reviewed the literature on dropout rates in online higher education, analyzed factors contributing to dropout, and proposed solutions to reduce the problem. They identified various factors contributing to online dropout in higher education, including demographic, course-related, technology-related, motivational, and support-related factors. These include aspects like student skills, course design, academic preparation, technology quality, learner motivation, and support services. As they recommended, addressing these factors is essential for institutions to lower dropout rates and improve student outcomes in online learning environments. They highlighted demographic factors that may influence doctoral students' persistence in online higher education, such as student skills, knowledge, English as a Second Language (ESL) education, living conditions, age, financial issues, disability, cultural norms, previous experience with technology, parents' education level, health issues, and anxiety. These factors significantly impact doctoral students' persistence and should be considered when reducing dropout rates and designing interventions to support students effectively. Such factors can negatively affect students’ skills and heavily influence their decisions to drop out or withdraw.

The frequency of references in academic literature highlights these factors. However, according to Schmidt and Hansson (2018), demographic factors influence doctoral students' persistence in various ways, including gender, marital status, age, housing, academic term, field

of study, and socio-demographic differences. Doctoral students may encounter unique challenges that affect their ability to persist. At the same time, factors such as race, ethnicity, geographical location, field of study, well-being concepts, and theoretical models can also impact students' capacity to complete their programs. Understanding and addressing these factors are essential for supporting the persistence of all doctoral students. Doctoral students play a vital role in developing skills related to mental health by recognizing and using coping mechanisms, understanding how personality traits influence their mental state, managing role conflicts and internal struggles, considering the effects of external and structural influences, continuously learning about and improving their well-being, actively managing their mental health, engaging actively in their academic pursuits, seeking support when needed, and maintaining a healthy work-life balance.

Doctoral students, during the completion process, develop skills related to mental states by managing stress, understanding how personality traits impact them, addressing role conflicts, recognizing external factors, evolving their well-being, engaging in self-care, seeking support, and coping with challenges such as peer pressure, evaluations, workload, financial difficulties, uncertainty, poor relationships with supervisors, and juggling multiple roles, all of which affect mental health (Park et al., 2020). Students manage their mental states by handling deadlines, defending their work, combating imposter syndrome, seeking feedback, balancing research demands, adapting to setbacks, maintaining resilience, and celebrating achievements. They improve their mental health skills by managing stress and burnout, staying motivated, seeking support, building resilience, coping with challenges, balancing work demands, reflecting on progress, fostering a positive mindset, and preparing for post-doctoral careers (Hyseni Duraku et al., 2023).

Additionally, demographic factors have some adverse effects related to doctoral students' knowledge (Bağrıacık et al., 2022; de Oliveira et al., 2021; Lang, 2022; and Utami et al., 2020), English as a second language (ESL) for education (Hachey et al., 2022; Prada et al., 2020; and Sauvé et al., 2021), and living conditions (Mubarak et al., 2022; Voigt & Kötter, 2021). On the other hand, several factors (mentioned in 9 studies), such as anxiety and health issues, positively influence completion rates. Furthermore, age shows a positive correlation with lower dropout rates (Behr et al., 2020; de Oliveira et al., 2021; Hachey et al., 2022; Hassan et al., 2019; Li et al., 2022; Prada et al., 2020; Sauvé et al., 2021; and Stoessel et al., 2015). Additionally, financial issues (Bağrıacık et al., 2022; Grau-Valldosera et al., 2019; Li et al., 2022; Radovan, 2019; Sauvé et al., 2021; Uzir et al., 2023; Voigt & Kötter, 2021; Zhou et al., 2020) positively impact completion, as data from 8 studies reveal. Other factors with positive effects include disability (Hassan et al., 2019; Sauvé et al., 2021), cultural issues and norms (Rudhumbu, 2021), technological knowledge and experience (Odunaike et al., 2013), and parents' education level—the highest level of education attained by any parent living in the same household as the student (de Oliveira et al., 2021; Sacală et al., 2021; Sauvé et al., 2021; Stoessel et al., 2015; Uzir et al., 2023). Reviewing the literature on demographic factors underscores their significant influence on doctoral degree completion rates. Institutions, educators, and students recognize both positive and negative factors and understand how to mitigate barriers and foster an environment conducive to students' achievement and persistence.

Another factor related to students' success in completing their studies is their nationality or background. A study conducted in Europe and the United States found that international students' completion rates were higher than those of native students (Espenshade & Rodriguez, 1997; Groenvynck et al., 2013; Wright & Cochrane, 2000). Conversely, Van der Haert et al.

(2013), who studied students in Belgium, found no difference between native and international students.

Regarding academic success, the completion rate of doctoral/Ph.D. Programs were five times more prevalent among students with the highest undergraduate GPA compared to those with the lowest undergraduate grades (Visser et al., 2007; Wright & Cochrane, 2000). In a meta-synthesis, Bair and Haworth (2004) found that academic success indicators, such as GPA, do not influence predictors of doctoral completion. To synthesize these findings, there is conflicting evidence. One study state that GPA has a significant impact.

A study by Bekova (2019) examined the relationship between doctoral students' employment and graduation outcomes at a research-focused university in Russia. The study focused on how employment during doctoral training influences the PhD completion rate. The author noted that employment during doctoral studies affects completion rates, with on-campus jobs being beneficial and off-campus work negatively impacting students' progress. Many advanced students in Russia face financial hardships, prompting them to seek off-campus employment due to limited state-funded scholarships. Programs that provide academic and financial support at the doctoral level significantly affect students' achievement and satisfaction. The number of Russian PhD graduates who share their stories of completing their dissertations within the expected timeframe is decreasing, which could lead to shortages of academic staff. The results showed that employment status during doctoral studies plays a significant role in completion rates, with on-campus employment, especially in research positions, associated with a higher likelihood of dissertation defense. The study recommended encouraging more on-campus job opportunities, promoting advanced doctoral programs, emphasizing academic motivations, supporting students aiming for academia, and addressing the challenges faced by

students working off-campus. Additionally, the study emphasized the importance of identifying at-risk student groups, providing appropriate support, considering factors such as employment status, financial aid, and academic focus, and using evidence-based strategies to improve doctoral completion rates.

Age Factors

Age is another demographic factor linked to completing a doctoral program. Although the youngest Ph.D. students at the beginning of their research careers, between 20 and 26 years old, have higher completion rates than the oldest students, who are between 27 and 75 (Wollast et al., 2018). Wollast et al. (2018), studied factors related to doctoral degree completion at universities, focusing on gender, nationality, marital status, master's grades, research field, and funding among doctoral students in Belgium. Marital status (being married increases the likelihood of dropping out) and lower grades in the master's program are associated with higher dropout rates. Age at registration, such as students over 40, also correlates with a lower success rate.

Nationality: Non-EU nationals have a lower success rate compared to Belgian nationals. The authors Devos et al. (2024) noted that age-related factors influence doctoral students' persistence and completion by categorizing students by age at registration: for example, students under 26 years old, between 26 and 40 years old, and over 40 years old. The findings indicated that younger students at the start of their research careers tend to have higher completion rates than older students. Such age-related factors affect doctoral students' persistence in finishing their studies. The literature on factors influencing PhD completion rates revealed several important findings, including the impact of marital status, master's grade, research field, funding, nationality, age at registration, university continuity, and field continuity on completion rates

(Devos et al., 2024). Recommendations based on the findings include providing support tailored to students' needs, offering additional resources to improve completion rates, and encouraging collaboration between universities. The literature also emphasized the importance of considering multiple factors together and providing support mechanisms for students with risk factors, such as tailored support for older students, mentorship programs, flexible program structures, further research on challenges faced by older students, and creating inclusive environments for students of all ages (Devos et al., 2024).

Yeasmin (2024) discussed various age-related factors affecting Ph.D. success, including age-related completion rates, gender disparities among international students, and the relationship between age and gender. The author emphasized that age, gender, and their interaction influence Ph.D. success rates and completion outcomes. According to the study, age is a demographic factor that impacts Ph.D. success, affecting program completion and future career achievements. The research highlights the importance of considering demographic variables, such as age, when analyzing the factors that drive Ph.D. success. Age-related factors influence doctoral students' persistence and completion rates by affecting dropout tendencies, financial support, gender disparities, and psychological well-being throughout the Ph.D. journey. Older students may face unique challenges or circumstances that influence their progress and completion outcomes compared to younger students. Studies suggest that age can affect the time required to complete a Ph.D. program, the support and guidance needed during doctoral studies, and the overall success of doctoral students in terms of completion and achievement.

Watthanapradith et al. (2016) discussed the influence of age factors on the completion of doctoral degrees, focusing on the age at the start of doctoral studies. The study's data showed completion rates across age groups, suggesting that, while some trends indicate higher

completion rates for younger students in specific fields, the statistical significance of these findings was not confirmed. Additionally, the document suggested that age factors did not significantly impact completion rates. A study on the factors influencing successful doctoral completion rates among academic staff at a public university in Thailand revealed its outcomes.

Studying in Europe, the USA, and Canada was associated with higher completion rates. The age at the start of doctoral studies did not significantly influence completion rates (Collier & Blanchard, 2024). Xavier and Meneses (2020) discussed age as a factor affecting dropout rates in online education, particularly among non-traditional learners, such as mature-aged or adult students with job and family responsibilities. These students face challenges such as time management issues, limited time, and balancing responsibilities, which are key factors influencing persistence and attrition in online education (Rehman et al., 2023). Although some studies found links between age and dropout rates, the research did not highlight age as prominently as other factors such as time management, motivation, and student support (Collier & Blanchard, 2024).

The study by Aina et al. (2021) explicitly discusses how age factors influence university dropout rates among students, emphasizing that older students may be at higher risk of dropping out due to increased opportunity costs and difficulties with integration and commitment within the academic setting. However, the document does not specifically address age factors affecting doctoral students' dropout rates. The study also notes that older students enrolling in university face a greater likelihood of dropping out because of higher opportunity costs, challenges in integrating with peers and professors, and reduced net benefits from attending university. Age is a significant factor that impacts student persistence and success in higher education.

Gender Factors

Several studies have examined the factors affecting doctoral students' completion rates (De Clercq et al., 2021; Ehrenberg et al., 2006; Groenvynck et al., 2013; Lehan et al., 2021; Momanyi, 2022; Szell, 2013; Sverdlik et al., 2018; Van Ours & Ridder, 2003; Visser et al., 2007; Wollast et al., 2018). Some researchers found that male students were more likely to complete their doctorate than female students, even when other factors, such as the doctoral discipline, were considered (Groenvynck et al., 2013; Van Ours & Ridder, 2003; Visser et al., 2007). Other researchers found no effect of gender on doctoral completion (Mastekaasa, 2005; Van der Haert et al., 2013; Wright & Cochrane, 2000; Spronken-Smith et al., 2018). To reconcile these contradictory outcomes, Ampaw and Jaeger (2011) noted that some studies showing no significant gender differences have used multiple fields of discipline, investigations, and analyses, and they suggested that confounding factors play distinct roles. In other words, according to these researchers, the issue was not whether female students graduate at lower rates than male students but whether females receive fewer financial opportunities than males. Overall, given the conflicting findings, it remains unclear whether gender impacts doctoral graduation rates because the studies cited here present contradictory results. One study highlights difference due to financial opportunities.

In summary, many factors influence dropout rates in online higher education, especially for doctoral students. Key factors include demographic, course-related, technology-related, motivational, and support-related aspects. Demographic factors such as student skills, ESL education, living conditions, age, financial issues, disability, cultural norms, previous technological experience, parents' education, health issues, and anxiety significantly affect doctoral students' persistence. Age is a notable factor, with younger students having higher

completion rates. Gender's impact on completion rates is debated, with some studies showing male students are more likely to complete their doctorates, while others find no significant gender effect. Employment during doctoral studies also affects completion rates, with on-campus employment being beneficial.

This subsection highlights the importance of addressing these factors to effectively support doctoral students and reduce dropout rates. Institutions should offer tailored support, mentorship programs, and flexible structures while considering multiple factors to improve completion rates.

Summary

This literature review aimed to understand other researchers' perspectives on the topic, clarify assumptions, refine research questions, and reexamine the gap. For this review, I selected 10 peer-reviewed studies and reference articles. Despite the broad selection of literature, synthesis, and discussion, most of the literature focused on understanding the factors influencing doctoral students' persistence. The researchers employed a range of measures and methodologies, making it difficult to distinguish between divergent and convergent literature. However, the key takeaway remains clear.

Persistence is essential for doctoral students' completion rates. Studies indicate that both intrinsic and extrinsic motivational factors influence doctoral students' persistence in finishing their studies. Factors such as motivation, institutional support, social relationships, demographics, gender, and diversity impact students' decision-making and persistence. Most research discusses differences between traditional (face-to-face) and online learning. The literature consistently shows that students with excellent work habits demonstrate persistence and success through effective time management and the ability to handle challenges efficiently.

Another study finds that divergent motivation and satisfaction are key drivers of persistence and success; motivation for learning enables self-regulating strategies for persistence even under time constraints (Veletsianos et al., 2021). A notable strength of this literature is that doctoral/PhD students typically complete their coursework without encountering significant obstacles. However, most students encounter challenges during the long-term research project and dissertation, and the overall completion rate remains unknown (De Clercq et al., 2021; Locke & Boyle, 2016).

In doctoral education, motivation has been studied through a meaningful lens, and the reasons students pursue a doctoral degree are categorized into intrinsic and extrinsic motivational factors (De Clercq et al., 2021). Intrinsic motivation develops from valuing intellectual skills (Evans et al., 2020; Whitcomb & Singh, 2021), interest in the program (Austin, 2002; Brailsford, 2010; Xavier & Meneses, 2020), and the desire to gain research experience (De Clercq et al., 2021; Sverdlik & Hall, 2020) or pursuing personal development (Aina et al., 2022). Motivation can be a challenge during the doctoral journey, but it is a mix of students' intrinsic and extrinsic motivational factors (Sverdlik & Hall, 2020). Throughout their program, doctoral students face numerous challenges, including motivational factors that impact their daily academic lives, especially during the transformation phases of their journey. Intrinsic motivation and challenges are often self-imposed by doctoral students, and overcoming them is linked to the confidence they develop during their studies (De Clercq et al., 2021). Research on how motivational factors impact doctoral students has found that measures and methodologies used by researchers primarily focus on institutional factors to understand student persistence. Despite extensive research, the findings vary, making it difficult to identify clear patterns of divergence or convergence. However, one study by De Clercq et al., 2021 showed strong statistical support.

Doctoral students' persistence and completion of their studies depend on several factors, including institutional ones. However, the interaction of multiple factors—such as internal factors (motivation, self-regulation) and external factors (support services, curriculum, and instruction)—also plays a role in the experiences of doctoral students. Several researchers have investigated institutional factors related to doctoral student persistence. Young et al. (2019) noted that some doctoral students become overwhelmed by the demands of online courses and program requirements, along with pressures from family and work. Spaulding and Rockinson-Szapkiw (2012) mentioned that many students cited prior coursework as helpful in preparing them for the challenges associated with dissertation writing. The literature highlights a need for assistance and mentorship throughout the dissertation process. Barriers to completing the dissertation have been identified as contributing to students dropping out of their doctoral programs (Kennedy et al., 2015). In a study by Spaulding and Rockinson-Szapkiw (2012), doctoral students reported that barriers related to the dissertation hinder their success.

In the literature on doctoral students' completion, several researchers have identified a relationship between positive interactions with others, a sense of community, and persistence (Hernandez et al., 2020; Terrell et al., 2009). However, some studies have shown mixed results regarding relationships with others (Lehan et al., 2021; Ivankova & Stick, 2007). Zahl (2015) explained that community results from social network development through relationships within an academic setting. Meanwhile, the literature continues to emphasize the importance of such relationships for doctoral students (Rockinson-Szapkiw et al., 2016). Relationships with peers seem to influence doctoral student persistence, as many students seek mutual support from their peers when they encounter difficulties or need help (Rockinson-Szapkiw et al., 2016; Zahl, 2015). However, scholarly relationships established through group assignments in the same stage

of the completion process have sometimes led to dissatisfaction, as students face similar challenges (Hernandez et al., 2020). In other cases, as noted by Xavier & Meneses (2020), peer mentorship systems have been developed to support students at various stages of their completion process.

Spaulding and Rockinson-Szapkiw (2012) noted that economic integration is essential for doctoral student persistence. Similarly, Deshpande (2016) and Hernandez et al. (2020) pointed out that financial stability and challenges act as obstacles to doctoral students' persistence on their academic journey. Rockinson-Szapkiw et al. (2016) noted that financial integration, which involves the connection between educational institutions' financial support and students' finances, is a key factor influencing both the emotional burden and support that doctoral students experience. This differs from educational financial support, which is defined as economic or financial aid provided solely by the education department or higher education institution.

Many doctoral students work, and sometimes their coworkers are also their academic supervisors. The literature on these situations reveals that doctoral students perceive them as both positive and negative, and they attempt to manage various factors (Zahl, 2015). Students who succeed despite these social challenges often report feeling supported by friends, family, and employers, unlike those who withdraw and drop out (Ivankova & Stick, 2007). A lack of sufficient financial support from employers creates a financial burden and affects students' ability to stay in their programs (Rockinson-Szapkiw et al., 2016). This review highlights how some doctoral students persist in pursuing their degrees despite numerous obstacles. Still, students face many challenges, and both known and unknown factors influence their persistence, which can help improve graduation rates.

Chapter 3: Research Method

This proposed study addressed the issue of low doctoral student completion rates, which dropped to 56.6% in 2021 (Council of Graduate Schools, 2023). It used a qualitative descriptive approach to gain a deep understanding of the factors influencing doctoral students' persistence, productivity, and success based on their experiences. The self-determination theory (Deci & Ryan, 2008) served as the guiding framework, allowing an exploration of the motivation, autonomy, and competence that affected all doctoral students.

Several factors identified in the research have been found to explain the low completion rates of doctoral programs discussed here. However, this study aimed to provide empirical evidence on doctoral students' experiences. These students experienced significant stress and faced numerous challenges throughout their academic journey (Allen et al., 2021; Offstein et al., 2004). They encountered various obstacles during their degree completion, including financial pressures, the demands of their scientific discipline, marital status (especially if married), family issues, and the level of academic and supervisory support they received (Shin et al., 2021; van Rooij et al., 2021; Borders et al., 2020; Lorensius & Lugan, 2022). The interactions between academic advisors, supervisors, peer communication, and the relevance of the chosen field of study played crucial roles in successful doctoral completion (Shin et al., 2023; Peltonen et al., 2017; Van Rooij et al., 2021). Additionally, symptoms of poor psychological health and overall well-being were more common among doctoral students than in the general educated workforce or people with non-doctoral higher education degrees (Levecque et al., 2017). These students also struggled with decision-making, decreased interest in their studies, and overall well-being issues related to psychological distress in higher education environments (Wollast et al., 2023; Levecque et al., 2017). Doctoral students sought to achieve academic milestones, pursue

international research careers, enhance their lifetime earnings, and assume leadership roles (Borders et al., 2020; Morrow et al., 2020). Furthermore, motivation and the level of supervisor support were key factors in determining the success and completion rates of doctoral students (De Clercq et al., 2021). This study examined the factors influencing doctoral students' persistence in completing their programs.

This chapter thoroughly reviewed the importance of qualitative descriptive research design for the proposed study. It discussed the research plan, chosen methodology, participants, sampling strategies, study procedures, data collection and analysis methods, ethical considerations, and concluded with a summary.

Research Questions

RQ1

What do doctoral students perceive impacted their persistence at distinct stages (coursework, capstone, or dissertation) in their program?

RQ1a

How do the perceptions of factors influencing persistence differ across disciplines?

RQ2

How do doctoral students perceive autonomy, competence, and relatedness influence their persistence at distinct stages of their program?

RQ2a

How does this influence differ between students at various stages in different academic disciplines?

Research Methodology and Design

The qualitative research approach was the most suitable and advantageous for the proposed study because it addressed the research problem, purpose, and research questions (Bradshaw et al., 2017; Yadav, 2022). Methodological assumptions in the qualitative approach involved understanding and interpreting the experiences or phenomena of doctoral students (Sebele-Mpofu, 2020). Therefore, I used it to ensure alignment with the philosophical beliefs guiding the research, making sure that data collection and analysis methods were appropriate for interpreting subjective experiences and building knowledge within the selected research paradigm (Kirongo & Odoyo, 2020; Sandelowski, 2010).

Qualitative methodology aims to gain insight into and understand the thoughts, feelings, and experiences of research participants. Unlike quantitative research, which provides insights into how and why certain behaviors occur (Sutton & Austin, 2015), qualitative research focuses on exploring underlying reasons and motivations. In contrast, quantitative research seeks to generalize findings to a broader population (Doyle et al., 2020). This approach has been essential in psychology and educational practices for investigating human behaviors, perceptions, and experiences, especially in collaboration with educators and researchers (Doyle et al., 2020; Sutton & Austin, 2015). Qualitative research was drawn from interpretivist and constructivist paradigms (Denzin & Lincoln, 2011). Interpretivism aims to build knowledge by understanding individuals' unique perspectives and the meanings they attach to them (Creswell & Poth, 2018). Constructivism sees knowledge as constructed as people work to make sense of their experiences (Creswell & Poth, 2018).

The interpretive paradigm is a framework in qualitative research that seeks to build knowledge by understanding individuals' unique perspectives and the meanings they assign to

their experiences (Creswell & Poth, 2018). It emphasizes the subjective nature of reality and focuses on interpreting social phenomena from the viewpoint of those experiencing them. This paradigm values deep understanding and the context-specific insights gained from studying lived experiences (Creswell & Poth, 2018).

The constructivist paradigm is a framework in qualitative research that sees knowledge as built through individuals' interactions with their environment and experiences (Creswell & Poth, 2018). It suggests that reality is subjective and influenced by human experiences and social contexts. Constructivism focuses on understanding how people interpret their experiences and the meanings they give to them (Creswell & Poth, 2018). This paradigm values the process of meaning-making and the shared creation of knowledge between researchers and participants. Positivist research is grounded in the positivist paradigm, which aims to predict outcomes and establish general laws through objective measurement and observation (Tomaszewski et al., 2020).

For this proposed study, qualitative research methodologies were utilized to conduct interviews with participants and observe their behavior (both verbal and non-verbal), as well as content analysis to gather rich, detailed data. It will value the context and depth of information (Creswell & Poth, 2018). In qualitative research, data are often textual or visual, providing in-depth insights into participants' perspectives and experiences (Creswell & Poth, 2018). This proposed study has included a transcript from videotaped interviews. These forms of data captured participants' thoughts, feelings, and behaviors, providing rich, detailed information for analysis. The textual data was transcribed verbatim from recordings, while the visual data included in video recordings that were analyzed for non-verbal cues and contextual information.

I actively participated in the research process, interacting closely with participants and interpreting data from their perspective (Creswell & Poth, 2018). It is essential to recognize that qualitative research focuses on understanding the depth of human experiences, whereas positivist research emphasizes objective measurement and generalizability.

Triangulation in qualitative descriptive research involves using multiple methods, data sources, or perspectives to improve the credibility and validity of the results (Flick, 2018). This study used various data-gathering techniques, including interviews, field notes, and video recordings. Methodological triangulation combined interviews, focus groups, and observations to provide in-depth insights (Tomaszewski et al., 2020). Data source triangulation involved collecting data from different participants (e.g., students and healthcare providers for patients) or locations (e.g., hospitals, academic institutions, and clinics). Investigator triangulation involves researchers in both the data collection and analysis stages (Gonzalez & Forister, 2020). Theoretical triangulation applies psychological and sociological theories to interpret participants' behaviors and experiences (Denzin & Lincoln, 2011).

This proposed study used multiple methods for data collection, including interviews, field notes, and video recordings. Using evidence from different sources provided several benefits; triangulation increased the credibility of the results (Gonzalez & Forister, 2020). Corroborating evidence refers to supporting information or data that strengthens and confirms the findings or claims in a research study (Sutton & Austin, 2015). Its purpose is to improve the trustworthiness and reliability of research results by providing multiple points of confirmation (Lincoln & Cuba, 1985). This technique, known as triangulation, ensures that the conclusions are strong and not based solely on a single source of information. It also helps create a more complete and detailed

understanding of the research subject. By incorporating diverse perspectives and methods, bias is reduced, thereby reducing the researcher's influence (Valencia, 2022).

Member checks, also known as participant validation, were employed in qualitative descriptive research to enhance the credibility and accuracy of findings (McKim, 2023). These checks involve sharing data, interpretations, or results with participants to verify their validity and relevance to their experiences (Varipio et al., 2017). This study aimed to ensure that the data and interpretations accurately represented participants' experiences and viewpoints, thereby boosting the trustworthiness of the results and involving participants in the process, which fostered a collaborative relationship (Elo et al., 2014). Member checking was a key method in this study, enhancing accuracy, credibility, and participant engagement (McKim, 2023). By regularly involving participants in confirming data and interpretations, I ensured that the findings were dependable and accurately reflected participants' experiences (Lincoln & Cuba, 1985).

Peer debriefing is a method used in qualitative descriptive research to strengthen the study's credibility and rigor (Tomaszewski et al., 2020). This technique involves working with peers or a group of peers outside the research team, allowing them to review and critique both the research process and its results (Denzin & Lincoln, 2011). It acts as an external check to validate the research process and findings, ensuring their credibility and dependability (Lincoln & Cuba, 1985). Peer debriefing helps identify biases, enabling the researcher to recognize and address any preconceived notions or assumptions they may have. Additionally, it boosts rigor by providing constructive feedback that encourages thoroughness and diligence in the research process (Creswell & Poth, 2018). Furthermore, this practice promotes reflexivity as researchers reflect on their decisions and interpretations. Overall, peer debriefing is a vital technique for this proposed study, significantly improving its credibility, rigor, and reflexivity (McKim, 2023). By

collaborating with informed peers to receive constructive feedback, I ensured that their findings are reliable and aligned with the data (Tomaszewski et al., 2020).

Audit trails involve maintaining comprehensive records of all research decisions, data collection, and analysis methods, enabling others to trace the research process and validate the reliability of the findings (Tomaszewski et al., 2020). This study used a systematic and transparent documentation approach to enhance the credibility and trustworthiness of its findings (Lincoln & Cuba, 1985). It included detailed records of all research activities, decisions, and modifications made throughout the study (Flick, 2018). This transparency improved credibility by providing a clear record of the research process, allowing for verification of findings, and ensuring that the process was consistent and replicable by others (Gonzalez & Forister, 2020). It also allowed peers or external reviewers to evaluate the research's rigor and integrity (Creswell & Ploth, 2018). By keeping systematic documentation of all research activities, decisions, and modifications, I ensured that the findings are transparent, reliable, and accurately reflect the data (Tomaszewski et al., 2020).

Reflexive journals refer to researchers documenting their reflections, decisions, and potential biases throughout their study (Sutton & Austin, 2015). This practice enhances transparency and helps researchers remain aware of their impact on the research (Denzin & Lincoln, 2011), which is crucial for this proposed study to improve its credibility, transparency, and depth (Creswell & Ploth, 2018). I maintained a detailed, ongoing record of their reflections, decisions, and experiences during the research process. In this study, reflexive journals played a significant role in strengthening the study's credibility, transparency, and depth (Tomaszewski et al., 2020). I ensured the reliability of the findings by continuously documenting personal reflections, methodological choices, and participant interactions (Tomaszewski et al., 2020).

Prolonged engagement and persistent observation are described in the literature as dedicating significant time to the field and closely examining the research environment to build trust with participants and gain a deep understanding of the context and phenomena being studied (Tomaszewski et al., 2020). These strategies are essential for ensuring credibility and depth in the proposed study (Denzin & Lincoln, 2011). Implementing these techniques involves spending sufficient time in the research setting, continuously observing the phenomena of interest to achieve thorough comprehension. These strategies significantly enhanced the descriptive aspect of this research, thereby improving its credibility, depth, and richness (Gonzalez Forister, 2020). By immersing myself in the field and conducting detailed, focused observations, I gained comprehensive insights into the phenomena and deepened my understanding of the research context (Tomaszewski et al., 2020).

Thick descriptions offer detailed and vivid portrayals of the research setting, participants, and findings, enabling readers to understand the context and apply the results to similar situations (Given, 2008; Schwandt, 2015). This idea was central to the proposed study, offering an in-depth and nuanced overview of the research environment, participants, and phenomena under examination (Tomaszewski et al., 2020). This approach goes beyond simple reporting to uncover the complexities and subtleties of social and cultural contexts (Denzin & Lincoln, 2011). By presenting comprehensive and detailed descriptions of the research environment, participants, and phenomena, researchers gained valuable insights and a thorough understanding of the social and cultural dynamics involved (Valencia, 2020).

Bracketing is described in literature as the practice of intentionally setting aside one's preconceptions and biases to focus on the experiences of participants, ensuring that the findings reflect these perspectives rather than the researchers' assumptions (Giorgi & Giorgi, 2003). This

technique played a crucial role in the proposed study by helping to control and reduce the influence of researchers' biases, preconceptions, and assumptions (Tomaszewski et al., 2020). It required researchers to set aside participants' beliefs and experiences to approach the study from an open and impartial perspective (Flick, 2018). Through ongoing reflection and documentation, I improved the credibility and trustworthiness of the findings while maintaining a focus on the participants' perspectives and experiences (Denzin & Lincoln, 2011).

Using a qualitative descriptive design in this study helped thoroughly explore and understand the experiences of doctoral students related to the detailed phenomena involved in their completion process (Saunders et al., 2018). It also offered flexibility in research design, data collection methods, and analysis techniques (Saunders et al., 2018). This approach allowed me to gain a comprehensive understanding of complex psychological processes, behaviors, and educational experiences (Saunders et al., 2018). The design facilitated direct investigation of experiences (Guest et al., 2020). Although employed in this study, it enabled rich data collection through interviews, observations, and document analysis (Guest et al., 2020). It contributed to the development of effective interventions and educational practices (Doyle et al., 2020) and supported practical applications in educational settings and psychological interventions (Doyle et al., 2020). By focusing on participants' perspectives and experiences, it provided important insights into their lived realities (Doyle et al., 2020).

I supported using a qualitative descriptive design because it effectively provides clear, minimally theorized accounts of phenomena. Unlike other qualitative methods and quantitative descriptions, which tend to be more interpretive or structured (Sandelowski, 2000 & 2010), qualitative descriptive designs offer a different approach. While various qualitative research methods, such as grounded theory, phenomenology, and ethnography, were available, these were

not the best fit for studies that did not need an extensive theoretical framework and instead focused on accurately describing participants' experiences. The primary reason for choosing a descriptive approach was its simplicity in capturing experiences through interviews, particularly in areas where limited information was available about the topic being studied (Sandelowski, 2010).

Population and Sample

The target population for this proposed study consisted of doctoral students in the United States who had completed their doctoral degrees. The sample consisted of PhD graduates from various disciplines and educational institutions (without restrictions on gender or age) who earned their degrees within the last two years. All participants possessed fluency in English, although it was not required to be their first language (Creswell, 2013). I defined the criteria for selecting the sample, considering demographic factors, field of study, discipline, academic setting, age, marital status, professional growth, impact, ongoing education, networking opportunities, and metrics of success or motivation (Casteel & Bridier, 2021). Participants were selected from those who completed their degrees between 2020 and 2023, regardless of whether their learning environment was online or traditional, and who were willing to share their experiences (Casteel & Bridier, 2021). The study involved around 15 participants, with a minimum of 10.

This study aimed to investigate the factors influencing doctoral students' persistence in completing their degrees (De Clercq et al., 2021). A key aspect of the qualitative descriptive approach is achieving data saturation, which occurs when no new information or themes emerge from the data. The sample must be sufficiently large to attain this saturation (Zoe et al., 2020).

Zippia analyzed the demographics and statistics of doctoral students in the United States using a database containing 30 million profiles. These estimates were corroborated with data from Black and Latino students (BLS) and current job openings to ensure greater accuracy. There were over 29,753 employed doctoral students nationwide. Of these, 47.1% were women and 52.9% were men, with an average age of 44 years. The predominant ethnicity among doctoral students was White (53.9%), followed by Hispanic or Latino (17.6%), Asian (11.8%), and Black or African American (11.0%). In 2022, women earned 92% of the income that men made. Additionally, 6% of all doctoral students identify as LGBT. Doctoral students were 86% more likely to find employment in educational institutions compared to private companies (https://www.zippia.com/doctoral-student-jobs/demographics/). Conversely, the National University reported that 104,953 women received doctorates or professional degrees, which constitutes 55.2% of all such degrees awarded. During the 2019/20 academic year, approximately 85,230 male students and 104,950 female students obtained doctoral degrees in the United States.

Data Saturation is a qualitative descriptive research method in which researchers gather data until no new information or themes emerge, ensuring a thorough understanding of the research subject (Fusch & Ness, 2015). This approach emphasized achieving redundancy in the data, signifying that sufficient data has been obtained. Data Saturation does not necessarily refer to a specific theory but instead highlights the importance of reaching a stage where no additional information is evident in the collected data (Francis et al., 2010). Authors such as Fusch and Ness (2015) and Sandelowski (2008) have examined data saturation, specifically the required volume of data until informational redundancy is achieved. Saunders et al. (2016) concluded that

saturation occurs when there is no further information or themes, indicating that the collected data is adequate to answer the research questions.

Zoe et al. (2020) described the moment when no additional information or any new theme emerged in the data, highlighting the thoroughness and richness of the collected information. According to a study by Francis et al. (2010), data saturation occurs when further data collection fails to yield new insights or understanding regarding the research topic. I continuously monitored saturation and compared any new data against existing data to detect redundancy, maintaining comprehensive notes and memos, as well as tracking the emergence of themes and the point at which no new themes arose (Sandelowski, 2008). Therefore, the goal was to involve 15 participants, with a minimum of 10 participants needed to achieve saturation.

This proposed study utilized a homogeneous data set, indicating that participants have similarities in their characteristics, experiences, or perspectives (Kuhn & Corman, 2010). In a homogenous sample, participants tend to share comparable views and experiences, allowing for quicker attainment of data saturation (Doyle et al., 2020). With fewer variations in responses, themes and patterns emerge more readily (Kuhn & Corman, 2010). On the contrary, heterogeneity signifies diversity among participants in terms of their characteristics, experiences, or perspectives (Kuhn & Corman, 2010). In a heterogeneous sample, participants often possess diverse views and experiences, resulting in a longer process to achieve data saturation (Hennink & Kaiser, 2022). The inclusion of diverse participants can introduce a broader range of experiences and perspectives, leading to the emergence of new themes and patterns over a more extended timeframe (Hennink & Kaiser, 2022).

I began with a clearly defined research question and a purposive sampling approach, a non-probability sampling technique commonly employed in qualitative research. Participants

were selected based on specific characteristics and criteria relevant to the research question. This method was particularly beneficial for the proposed study, as it aimed to understand the participants' experiences or phenomena. It focused on selecting individuals who have provided valuable and relevant data, possessed expertise, and demonstrated interest in the study (Doyle et al., 2020).

I utilized social media platforms to recruit participants for this study because they were highly effective, offering a broad reach and the ability to target specific demographics (Vuori, 2012). The platforms I planned to utilize include LinkedIn, ResearchGate, Academia.edu, and Twitter (Darko et al., 2022). These were widely used for networking, sharing research, engaging in academic discussions, collaborating on projects, and keeping current with academic trends (Braun & Clark, 2006).

LinkedIn was an ideal social media platform for recruiting doctoral-degree holders for qualitative dissertation research (Darko et al., 2022). This was due to LinkedIn's role as a professional networking site where many doctoral degree holders and academics maintain active profiles (Stokes et al., 2019). The platform fostered professional and academic interactions, making it an ideal medium for connecting highly educated individuals (Stokes et al., 2019). LinkedIn provided advanced search filters that enable researchers to find individuals based on their educational qualifications, job titles, and industries (Darko et al., 2022). As a result, I could more readily identify and engage with the target audience, specifically doctoral or PhD degree holders. Furthermore, LinkedIn offers groups and communities focused on specific academic fields and professional interests that are easy to join and participate in, thereby facilitating access to the desired audience. The InMail feature allowed direct messaging to potential participants, adding a personal touch that enhanced response rates (Darko et al., 2022). Therefore, utilizing

LinkedIn helped me to foster a professional image in recruitment efforts, attracting doctoral degree holders who were selective about the research studies they participated in (Darko et al., 2022).

I ensured that my LinkedIn profile was fully updated, incorporating professional language that highlighted my profile, proposed research, and academic background to establish credibility (Kashif et al., 2019). I created a clear and concise message detailing the purpose of my proposed dissertation research on the participant recruitment flyer (see Appendix C). This included an explanation of participation and any incentives, such as a $25 Amazon electronic gift card, awarded to all 10 participants who completed the research sessions (see Appendix C). While monetary incentives were ethically suitable in certain studies, they required careful consideration to prevent undue influence, guarantee fairness, and maintain scientific validity. A study by Abdelazeem et al. (2022) explored the use of monetary incentives to enhance recruitment and participation rates in a randomized controlled trial. It emphasized that small financial incentives can significantly boost the response and consent rates of potential participants. However, the literature also raised ethical concerns regarding these incentives, especially for participants from lower socioeconomic backgrounds (Garland et al., 2021). Even with financial incentives, concerns arose that participants, particularly those with lower levels of education, might not fully understand the study's purpose and benefits (Garland et al., 2021).

I created a web-based flyer (see Appendix C) to enhance participant engagement in LinkedIn groups focused on psychology and education (Darko et al., 2022). I planned to post a flyer (see Appendix C) outlining the purpose of the proposed study and inviting the target audience to participate. LinkedIn served as an excellent platform for advertising, enabling me to reach a wider audience (Darko et al., 2022). The ad targeting was based on specific criteria,

including the willingness to share experiences related to the doctoral completion journey, academic institutions, disciplines, and different stages of the process. To spark participants' interest, I shared my insights, background, and the reasons behind my dissertation topic selection. By leveraging LinkedIn's professional network and targeted search features (Stokes et al., 2019), I aimed to effectively recruit doctoral degree holders for the proposed study, which was built on the dissertation research conducted by postgraduate students.

Materials

This study employed qualitative descriptive research, a behavioral research approach, to understand the motivations behind doctoral students' completion and their interpretations of human behavior (Austin, 2015). I collected non-numerical data through videotaped interviews, which were recorded in various formats, including text, audio, and video. This allowed for the examination of subtleties and patterns that quantitative data might have missed (Doyle et al., 2020). Rather than emphasizing quantity, qualitative research seeks to understand the reasons and methods that drive behavior (Hennink & Kaiser, 2022). This approach fostered a comprehensive understanding of specific situations, problems, or events from the perspectives of those directly involved. For example, how did you feel when enrolling in a doctoral program? Additionally, could you describe your experience of starting your dissertation? These are representative qualitative research questions (Hennink & Kaiser, 2022). Interviews included open-ended questions designed to elicit participants' viewpoints, emotions, and experiences related to particular topics, sounds, or services. Exploring factors that influenced the persistence of doctoral students was also a key focus (Boyce & Neale, 2006). The comprehensive data collection provided in-depth insights to help me better understand the subject.

Transcripts from interviews were based on literature-informed content and applicable methodologies, typically using semi-structured face-to-face interviews (Spaulding & Rockinson-Szapkiw, 2012). Other methods, such as phone interviews and online approaches, were also used (Doyle et al., 2020). According to existing literature, in-depth interviews serve as a qualitative research method that involves conducting detailed, personal interviews with a small number of participants to explore their views on specific concepts, programs, or situations (Boyce & Neale, 2006).

Interviews were conducted individually using the Zoom App, allowing a more tailored and detailed understanding of each participant's perspective (Sutton & Austin, 2015). This proposed study aimed to gather deep, nuanced insights from participants that are difficult to obtain through quantitative methods like surveys (Sutton & Austin, 2015).

Field testing, carried out within a qualitative descriptive framework, involved implementing and evaluating research tools, such as interview protocols, to verify their effectiveness and relevance (Dunwoodie, 2023). An expert reviewer assessed the interview guide and tools, providing feedback on their relevance, clarity, and thoroughness (Lofland & Lofland, 1995). These pre-testing techniques ensured that the data collection instruments were well-designed, clear, and effective in gathering the necessary information from participants.

The field test required experts to evaluate a draft of the interview questions designed for a qualitative study. The goal was to verify the credibility and reliability of these questions. The experts, who were separate from the dissertation study participants, provided suggestions and recommendations to improve the questions. Potential field testers and experts were contacted via email, which included an overview of the study, such as the problem statement, study purpose,

and research questions. They reviewed the interview questions to ensure they accurately reflected the key concepts, were clear, and avoided awkward phrasing.

The data collected during the field test phase were analyzed to identify issues, which led to revisions of the interview guide and questionnaire based on the feedback received to improve clarity and effectiveness. This feedback played a key role in refining the interview questions and the overall interview guide. Conducting field tests was an essential part of qualitative descriptive research, confirming that the research instruments were well-designed, practical, and capable of producing rich, detailed data that accurately reflected the participants' experiences (Roberts, 2020).

Study Procedures

I secured approval from the Institutional Review Board (IRB) at the National University in California before starting data collection. Once I received this approval, I reached out to the participants via LinkedIn. I uploaded the flyer to the LinkedIn website app. I approached candidates with doctoral or PhD degrees to gauge their interest in the research topic outlined in the flyer. Selection for interviews was based on responses to the demographic survey. An informed consent form, detailed in Appendix D, was emailed to participants for their review and verbal consent during the interview. Interview invitations were sent via the Zoom app, ensuring that both participants and I were in separate, private virtual rooms. At the start of the interview, we confirmed that all participants were in a closed-door setting.

The interviews started with demographic questions, such as "Please introduce yourself by your full name and review the PowerPoint slides" (Appendix B). All interviews were recorded digitally using a Zoom Business account, which enabled video calls with recordings

and transcripts, thanks to the Zoom Business subscription. Research participants received meeting links via LinkedIn (Darko et al., 2022).

No interview took place without the participants confirming their written and verbally informed consent. Each interview was conducted in a single session. Using a Zoom business account enables automatically generated transcripts, which are reviewed and edited for accuracy. I briefly discussed the ethical considerations of the study, including participants' right to withdraw at any time. Additionally, I conducted interviews in a comfortable and welcoming environment, such as the researcher's or the participant's office or home, to ensure participants felt at ease. I used a PowerPoint presentation I created over time as a slideshow to share on Zoom. This was an integral part of my interview protocol (see Appendices A and B) to help participants illustrate their doctoral journey. This approach enhanced discussion and provided a visual framework for their experiences.

I created an initial interview guide that included questions about doctoral students' experiences, challenges, and support systems. Field tests were conducted with experts, who reviewed my interview protocol. The protocol included an introduction to the study, a problem statement, the study's purpose, and the interview questions. They provided feedback via email with helpful recommendations. I incorporated their suggestions and revised my interview guide accordingly. Afterward, I finalized my interview protocol based on feedback from potential field testers to ensure I thoroughly captured all necessary information and addressed expert concerns. I followed up with additional specific questions as needed. I planned to record the interviews to accurately capture all details and transcribe the recordings in accordance with established guidelines to ensure consistency and reliability.

I used thematic analysis (Braun & Clark, 2006) to identify, analyze, and report data patterns by carefully reading and listening to the data multiple times, coding it, and highlighting key themes. My process involved repeatedly developing and refining codes, comparing and discussing them with co-researchers to ensure a shared understanding and consistency. Additionally, I examined the experiences of both completers and non-completers to identify the main differences. The focus was on factors such as initial motivations, supervisor support, peer support, organizational culture, and perceived progress, which highlighted important findings, including the importance of making progress on a meaningful research project without excessive stress. I also involved participants in discussions about how these factors are interconnected and how they influence the completion of doctoral studies.

Data Analysis

I followed the framework established by Braun & Clarke (2006), which outlined several key steps in qualitative descriptive data analysis. Braun & Clarke (2006) define thematic analysis as a comprehensive guide within psychology. This method was flexible, easy to use, and widely accepted in qualitative research for identifying, analyzing, and reporting patterns (themes) within data. The document outlines the theoretical foundation of the approach and its relationship to other qualitative methods, offering a detailed, step-by-step guide for conducting thematic analysis.

In this proposed study, data collection began by identifying the participants, their activities, and the contexts in which doctoral students engage, emphasizing the fundamental nature and framework of their experiences. Data collection methods included unstructured, open-ended individual interviews, observing both verbal and non-verbal behaviors of potential

participants (doctoral students), and reviewing relevant documents and artifacts. The goal was to gather comprehensive data on all aspects of the events, ensuring detailed, accurate descriptions.

This study used a coding system to categorize and organize information from observations, interviews, and other sources (Jnanathapaswi, 2021). The coding process involved assigning codes to the initial dataset, identifying similar phrases, patterns, themes, relationships, and sequences, and gradually developing a concise set of generalizations that reflect the consistencies within the data (Jnanathapaswi, 2021; Sandelowski, 2000). This coding system was essential for guiding subsequent data collection, refining generalizations, and connecting these generalizations to established knowledge or theories (Doyle et al., 2020). In qualitative descriptive research, coding can be inductive, emerging from the data itself, or a priori, based on a pre-existing template (Doyle et al., 2020). I used the software NVivo, which was structured around the participants' words, concepts, or designated code. I then systematically grouped these elements to develop emerging themes or categories, continuing until I identified the final themes (Sandelowski, 2000; Thorne, 2000).

Braun & Clark (2006) emphasized the importance of data collection through interviews in shaping the coding and analysis stages. I transcribed the interview data into written form and interpreted it for meaning and themes using NVivo software. This transcription was a careful, straightforward representation in plain English, capturing all verbal expressions and some nonverbal cues. By actively writing and revising the raw data, I identified interesting and significant aspects. The coding process in thematic analysis involved transcribing the data, engaging in multiple readings, and noting initial thoughts during data collection, especially during the interviews. Generating Initial Codes was a crucial part of the raw data that holds meaningful significance (Boyatzis, 1998). Braun and Wilkinson (2003) presented a themes map,

which involves organizing various codes into potential themes and consolidating all related coded data within these themes. Tools such as tables or mind maps can assist with this process. I refined the themes, verified their validity against the coded extracts and the whole dataset, and created a thematic analysis map. This effort aimed at clarifying the themes of participants in this study, indicating that limited data might prevent some themes from emerging or lead to overlap with others. In contrast, some themes may need further subdivision (Patton, 1990). It involved organizing data extracts into a straightforward narrative. Ultimately, the analysis and report writing resulted in a concise, coherent, and compelling overview of data across themes. Possible themes included adaptation strategies, emotional responses, and support systems. Ongoing review and refinement of the data and themes are essential to ensure that the research questions accurately reflect the data (Braun & Clark, 2006). This involved combining similar themes, breaking broad themes into more specific categories, or discarding themes without strong data support (MacQueen & Namey, 2012). I created a thematic map to illustrate the connections between themes and sub-themes (MacQueen & Namey, 2012). Furthermore, I explained how each subject aligns with the research question and the broader study context.

Thematic analysis, a qualitative research method, was employed to identify, analyze, and communicate patterns (themes) within the data (Coker, 2022; Sandelowski, 2000). This method systematically examines data to reveal recurring themes that help answer the research question. The typical process involves becoming familiar with the data, creating initial codes, exploring themes within those codes, refining the themes, naming them, and compiling the final report (Coker, 2022). As a widely recognized qualitative analysis method, thematic analysis offers a flexible, accessible approach to uncovering unexpected insights and supporting theory development in psychology (Braun & Clark, 2006).

During the initial interviews, I started analyzing the data. For example, as soon as data collection began, I analyzed it in real-time to identify emerging themes. In a qualitative descriptive approach, defining and coding these themes was essential for both data collection and analysis. These steps helped me organize and interpret the data to uncover patterns, insights, and meanings relevant to the research question (Sandelowski, 2000).

Assumptions

This qualitative research was rooted in philosophical principles, highlighting the subjective and socially constructed nature of reality. It prioritized diverse realities, personal experiences, and interactions, favoring unique perspectives over universal truths (Weaver & Olson, 2006) through an interpretive framework that recognizes subjectivity and the complex nature of human experiences (Parahoo, 2014).

The ontological assumption of qualitative research holds that reality is subjective, socially constructed, and varies across individuals. This approach focuses on understanding unique perspectives and contexts rather than seeking universal truths (Crotty, 1998). Additionally, language plays a crucial role in shaping our perceptions of reality, and my aim is to interpret the meanings that individuals ascribe to events within their natural settings (Denzin & Lincoln, 2011).

The epistemological assumption in qualitative research is that knowledge is subjective, context-dependent, and constructed through interactions, meanings, interpretations, and experiences of events within their social and cultural contexts (Denzin & Lincoln, 2011). I acknowledged the influence of personal perspectives, values, and beliefs on understanding phenomena, highlighting the importance of subjective realities and the researcher's role in interpreting and shaping knowledge (Parahoo, 2014).

Qualitative research methodology is built on several assumptions, including in vivo coding (Becker, 1996; Maxwell, 1992). One key assumption is subjectivity, which holds that reality is shaped by personal experiences and interactions (Becker, 1996). Researchers must acknowledge their subjectivity and its impact on the research process. Contextual understanding emphasizes the importance of considering the context of phenomena, including various social, cultural, historical, and environmental factors that influence participants' experiences and views (Wolcott, 1994; Strauss & Corbin, 1998). A participant-centered approach assumes that participants are experts in their own experiences (McMahon, 1996; Poirier & Ayres, 1997), thereby prioritizing their voices and perspectives in the analysis for authenticity and depth. Qualitative research asserts that comprehensive, detailed data are essential to grasp complex phenomena (McMahon, 1996; Poirier & Ayres, 1997), typically gathered through interviews, focus groups, and observations. The research process is viewed as iterative, where data collection and analysis happen simultaneously, informing one another (McMahon, 1996), allowing for adaptability as new insights arise (Poirier & Ayres, 1997).

Qualitative research predominantly employs inductive reasoning, in which patterns, themes, and theories are derived from the data rather than being predetermined. This method contrasts with deductive reasoning, which evaluates existing hypotheses (Wertz, 1983). The holistic viewpoint posits that phenomena should be comprehended as a whole, acknowledging the connections between various elements rather than examining variables in isolation. The multiple realities approach recognizes the existence of various perspectives and strives to encompass this diversity rather than pursuing a singular, objective truth. Researchers are expected to practice reflexivity, consistently examining their biases, assumptions, and the impact of their presence on the research process. This practice is crucial for upholding rigor and

credibility. Qualitative research typically holds that findings are not intended for generalization to larger populations; instead, they aim to provide profound insights into specific contexts or groups. These foundational assumptions influence qualitative research design, data collection, analysis, and interpretation, ensuring that the research accurately reflects participants' experiences and the contextual framework in which they occur (Sandelowski, 2000).

Limitations

One limitation of employing the qualitative descriptive approach in this proposed study is the potential for researcher bias to affect data collection, analysis, and interpretation (Parahoo, 2014). This approach will face challenges regarding generalizability to larger populations and will also be time-consuming due to the meticulous nature of data collection and analysis (Denzin & Lincoln, 2011). Another limitation is the risk that researcher bias may affect data collection, analysis, and interpretation (Guest et al., 2020). The generalizability of this method to larger populations will be limited, and its thorough data collection and analysis will require a significant time investment (Guest et al., 2020). The introduction of subjectivity in data analysis and interpretation poses difficulties in achieving consistent interpretations, particularly for complex phenomena experienced by doctoral students (Guest et al., 2020).

The research by Devos et al. (2017) identified several limitations inherent to qualitative descriptive studies. For instance, in context-specific narratives, the experiences shared by doctoral students (participants) may reflect their context, interpretations, and perspectives, portraying perceptions of reality rather than an objective truth. Consequently, the results might not fully capture the experiences of other doctoral students in similar or different settings. This proposed study will specifically focus on the personal narratives of doctoral students, deliberately omitting insights from institutional supervisors, faculty members, or administrative

staff that could otherwise enrich understanding. Conversely, doctoral students (participants) will recount their experiences (stories) in hindsight, potentially leading to a reinterpretation of events as they seek to construct a self-protective academic meaning from those experiences (de Valero, 2001; Wao, 2010). There may also be issues related to a lack of inter-rater reliability and triangulation. The study will not include indices of inter-rater reliability or collate the information gathered with other sources, which could have augmented the findings. Nonetheless, these limitations underscore that while qualitative descriptive research offers valuable insights, its findings may not be universally applicable or entirely comprehensive without integrating additional perspectives and methodologies (Spaulding & Rockinson-Szapkiw, 2012).

Delimitations

In qualitative descriptive research, delimitation refers to the boundaries set by researchers to define the study's scope and focus (Sandelowski, 2009). These delimitations ensure that the study remains manageable and relevant (Doyle et al., 2020). Key aspects of delimitation in qualitative descriptive research involve identifying specific events, phenomena, or experiences to be examined (Spaulding & Rockinson-Szapkiw, 2012). Additionally, it does not employ purposeful sampling to select participants who can provide rich, relevant information about the topic. Specifying the research context or setting ensures it accurately reflects the phenomenon’s natural state (Spaulding & Rockinson-Szapkiw, 2012). Selecting suitable data collection methods includes open-ended interviews, focus groups, observations, and document analysis. This process establishes a timeline for data collection and analysis, employing a data-derived approach to generate codes and themes directly from the data rather than relying on pre-existing theoretical frameworks (Doyle et al., 2020). These delimitations will help keep the study focused on

providing a clear and comprehensive summary of the events or phenomena being investigated (Sandelowski, 2000).

This study intended to interview 10 to 15 former doctoral students from U.S. universities, ensuring a diverse representation in academic discipline, university type, and gender. This selection encompassed standard profiles while reflecting the diverse experiences that PhD and doctoral students face (De Clercq et al., 2021). The objective is to understand doctoral students' perceptions of those who completed their programs versus those who did not, with an emphasis on identifying relevant dimensions and processes. A qualitative research design was employed, using semi-structured interviews to deeply explore the complexities of the doctoral journey. This approach is selected to capture participants' viewpoints and to examine how various dimensions interact. Institutional leaders, faculty, and administrative personnel are excluded from the study to maintain a focus on doctoral students' narratives (Doyle et al., 2020). The study will depend on participants' retrospective reflections on their doctoral experiences, which may require a reinterpretation of past events. These boundaries will facilitate a focused and thorough exploration of doctoral students' experiences while acknowledging that the findings may not be universally applicable or fully comprehensive without including additional perspectives and methods.

Ethical Assurances

In qualitative descriptive research, ethical considerations are essential and typically encompass factors such as informed consent, confidentiality, respect for participants, harm minimization, beneficence, transparency, debriefing, obtaining ethical approval, responsible data handling, maintaining the integrity of the researcher, and avoiding harm (Malakar, 2022). Researchers must ensure that participants are well-informed, safeguard their identities, treat them

with respect, minimize harm, maximize benefits, be transparent, offer debriefing, obtain ethical approval, manage data responsibly, and maintain integrity throughout the research process (Braun & Clark, 2006).

Ethical considerations play a vital role in qualitative descriptive research, safeguarding participants' rights and ensuring the integrity of the research process (Darko et al., 2022). Ethical dilemmas are fundamental concerns in research involving human subjects and can emerge at any stage of the study, particularly during data collection (Creswell, 2013). Consequently, as a researcher, I need to furnish participants with detailed information about the study, covering its purpose, procedures, potential risks, and benefits (Spaulding & Rockinson-Szapkiw, 2012). I will ensure that participation is voluntary and that participants retain the right to withdraw at any time without facing negative repercussions (Hamal, 2013). I will obtain written or recorded consent from participants, ensuring they have the opportunity to inquire and receive clear, adequate answers (Sandelowski, 2000). I will prioritize the confidentiality, privacy, and anonymity of participants by implementing protective measures for their data, including the use of pseudonyms and the removal of identifying information (Creswell, 2013). This includes securely storing data, whether in physical or digital formats, to prevent unauthorized access and ensure that participants' identities remain undisclosed in any reports or publications resulting from the research (Martinez-Mesa et al., 2015).

I prioritized participants' privacy by avoiding intrusive questions and managing sensitive topics with care. Participants were given the option to skip questions or withdraw from the study if they felt uncomfortable (Sandelowski, 2000). The study was designed to minimize potential harm or discomfort to participants while offering benefits, either directly to them or to the

broader community (Sandelowski, 2000). Following the interviews, one participant's name will be randomly selected, and they will receive a $25 Amazon e-gift card via email.

I treated all participants with dignity and respect while acknowledging their autonomy and individual rights. I was aware of and sensitive to cultural differences, ensuring that the research process honors these aspects (Boddy, 2016). Before data collection, participants were informed of their right to withdraw from the study at any time, ensuring their involvement was voluntary and without repercussions (Boddy, 2016). Prior to the interviews, participants received a concise introduction to the study, which outlined its purpose and addressed relevant ethical considerations (Reynolds, 2019). This process included obtaining informed consent from the participants. These ethical guidelines were established to ensure that the study was conducted in a manner that respected participants' rights and autonomy (Reynolds, 2019).

Transparency and honesty were crucial concerns during the research process, particularly regarding potential conflicts of interest (Mumford et al., 2021). I prepared a report of my findings with integrity, ensuring accuracy and avoiding any fabrication, falsification, or improper data manipulation (Laryeafio & Ogbewe, 2023). Before commencing the research, I obtained approval from an Institutional Review Board (IRB) or an ethics committee. I ensured that the study adhered to ethical standards and safeguarded participants' rights. For participants who expressed an interest in research, I shared the findings with them. Additionally, I provided opportunities for feedback on the research process, addressed any concerns raised, and informed them of their rights to access their data and withdraw from the study at any time (Mumford et al., 2021). I consulted with participants to confirm their agreement with the open codes created from their interviews and to identify any corrections they may have suggested.

The Researcher

The researcher, with over 40 years of experience in both large and small organizations, is currently employed at the Texas Department of Criminal Justice. He holds a Master of Science in Psychology and a Bachelor of Science in Psychology and Biology. This extensive background adds credibility to the study. There is no direct or indirect relationship with participants that could create a conflict of interest, including any reported contacts or relationships that might introduce bias in the research. The researcher is trained in the necessary skills to conduct this study. Throughout his career, he has interviewed numerous candidates for hiring. His capabilities include training in listening skills acquired through corporate training, as well as completing qualitative research courses at Walden University and Northcentral University. He has also managed corporate communications, bolstering both internal engagement and external awareness regarding critical initiatives.

Summary

Chapter 3 outlines a proposed qualitative descriptive study to understand the factors affecting doctoral students' persistence, productivity, and success. The researcher was motivated by the low doctoral completion rate, which was reported at 56.6% in 2021. The research employed a qualitative descriptive approach, guided by self-determination theory, to explore doctoral students' experiences across disciplines and program stages.

The research questions of this study aimed to explore the factors doctoral students believe influence their persistence and how these beliefs vary by discipline and program stage. This study aimed to address the following question: What factors do doctoral students believe influence their persistence? How do these beliefs change across different disciplines and program stages? Qualitative methods were used, including document analysis, interviews, and thematic

analysis. Data were collected through semi-structured interviews with doctoral graduates who completed their degrees within the past 2 years. The sample included graduates from various disciplines and institutions across the United States, with no restrictions on gender or age. The goal was to achieve data saturation, which was generally reached with 10 participants. This sample size was chosen to ensure a diverse representation of doctoral students' experiences, which was essential for a comprehensive understanding of the factors contributing to their persistence and success. Data was collected via Zoom interviews, then transcribed and analyzed using coding and thematic analysis to identify patterns and themes.

Ethical Considerations: The research prioritized obtaining informed consent, maintaining confidentiality, and respecting the participants. The Institutional Review Board (IRB) is an independent entity that reviews and approves human subject research. It obtained ethical approval to guarantee that the study adheres to the highest ethical standards. The research acknowledges the potential for researcher bias, limited generalizability, and the labor-intensive nature of qualitative studies. It focused on doctoral students' narratives, deliberately omitting viewpoints from institutional supervisors and faculty.

In Chapter 3, I highlighted the importance of understanding doctoral students' experiences to improve completion rates and overall satisfaction. I suggested conducting additional research to investigate these factors across various profiles and disciplines.

Chapter 4: Findings

According to the Council of Graduate Schools (2023), the overall doctoral completion rate in the United States was 56.6% in 2021, which was significantly lower than the completion rates for both undergraduate and master's degrees (NCES, 2022). Variations in completion rates across programs have been observed, with attrition rates as high as 70% in Doctor of Education (EdD) programs compared to 40% to 60% for other doctoral programs (Nettles & Millett, 2006). Factors influencing completion rates have included financial burden, scientific discipline, marital status (especially being married), family issues, and academic and supervisory support in the United States (Borders et al., 2020; Shin et al., 2021), the Netherlands (van Rooij et al., 2021), and Indonesia (Lorensius & Lugan, 2022). The relationship between academic advisors, supervisors, peer communication, and suitable field of study projects is crucial for doctoral completion and success in the US (Shin et al., 2023), Finland (Peltonen et al., 2017), and the Netherlands (van Rooij et al., 2021). Motivation and supervisor support have had a significant influence on the educational success and completion rates of doctoral students in Belgium (De Clercq et al., 2021).

Symptoms of poor psychological health and well-being have been more common among doctoral students compared to the educated workforce and those with non-doctoral higher education degrees in the United Kingdom (Levecque et al., 2017). Psychological distress in higher education may challenge doctoral students' decision-making, interest in their studies, and overall well-being, as observed in Brussels (Wollast et al., 2023) and the United Kingdom (Levecque et al., 2017).

Several studies have examined prior research on doctoral students' motivations, psychological well-being, and persistence in completing their degrees. Lovitts (2001) described the so-called invisible problem of doctoral students' motivational and social experiences. Sverdlik et al. (2018) reviewed factors influencing doctoral students' completion, achievement, and well-being. Bair & Haworth (2004) and Spaulding & Rockinson-Szapkiw (2012) explored factors affecting persistence in doctoral programs. Perkins et al. (2019) and Shin et al. (2022) investigated motivation factors and their relationships with burnout, dissent, and persistence. Shin et al. (2022) identified three motivation factors among doctoral students. Litalien et al. (2019) and Gillet et al. (2017) studied motivation factors in undergraduate and high school students, providing insights applicable to doctoral contexts. Chen et al. (2023) investigated the impact of the research environment and motivation on PhD students. Marais et al. (2018) explored indicators of psychological distress, such as burnout and depression, among doctoral students. Litalien et al. (2015) linked autonomous motivation with well-being and satisfaction in academic pursuits. Golde (2000, 2005) and Lovitts (2001) analyzed doctoral attrition and its causes. Castello et al. (2017) identified a lack of motivation and insufficient socialization as key factors contributing to dropout. Devos et al. (2015, 2017) emphasized the importance of supervisory relationships in promoting doctoral persistence. Ryan and Deci (2017) provided a theoretical framework for understanding doctoral students' motivation. Howard et al. (2021) conducted a meta-analysis on SDT's application to student motivation and outcomes. Shin et al. (2022) identified three motivation profiles among doctoral students. Litalien et al. (2019) and Gillet et al. (2017) studied motivation profiles in undergraduates and high school students, offering insights relevant to doctoral populations. Overall, previous research highlighted the importance of motivation, psychological well-being, and social support in fostering the

persistence and success of doctoral students. These studies also describe four distinct motivation profiles among PhD students: low self-determined, introjected, identified, and high self-determined, and how these factors influence academic outcomes. For example, high self-determination correlated with the most favorable academic results, including higher persistence, greater satisfaction with studies, perceived performance, publications, and positive postdoctoral intentions. Conversely, it is also associated with lower dropout intentions and fewer dissertation challenges.

The problem addressed in this study was the low completion rate among doctoral students, reported at 56.6% in 2021 (Council of Graduate Schools, 2023). The purpose of this qualitative descriptive study was to gain an in-depth understanding of the factors that, based on their experiences, impact doctoral students' persistence, productivity, and success. The theory guiding this study was self-determination theory (Deci & Ryan, 2008), which provided a framework for examining doctoral students' self-determination, motivation, autonomy, and competence. This study aimed to capture the attention of higher education professionals and contribute to the literature addressing doctoral students' completion rates. Additionally, the study aimed to contribute to the existing literature on factors influencing doctoral student persistence. A descriptive qualitative design was the appropriate approach, as the objective was to understand the factors influencing participants' persistence through their experiences related to a practical problem (Doyle, 2019).

This chapter is conscientiously structured around the study's research questions, facilitating a comprehensive analysis of the findings. Each section begins with a reiteration of the pertinent research question, followed by an in-depth exploration of the themes and subthemes identified during the data analysis. Direct quotations from participants substantiate the findings,

elucidating the multifaceted factors that influenced participation in extracurricular activities. In this chapter, I then outline the results related to the research questions, offering a systematic review of participants' (doctoral students') experiences regarding barriers and the effects of factors that impede extracurricular activities, such as completing their doctoral studies. This format ensures a clear connection between the research questions, the data collected, and the results presented. Evaluation of findings is examined in conjunction with existing research and theoretical frameworks, highlighting their strengths, limitations, and implications. Chapter 4 concludes with a summary of the primary outcomes, setting the stage for further interpretation and analysis in Chapter 5.

Trustworthiness of the Data

Trustworthiness signifies confidence in research outcomes, indicating that the data accurately represent the phenomenon (in this case, doctoral students' experiences) under study and are minimally influenced by researcher bias, thereby safeguarding the study's credibility and validity (Ahmed, 2024; Bang, 2024). Data trustworthiness is essential in qualitative research, where interpretations are crucial. This dissertation research study implemented strategies to establish credibility, transferability, dependability, and confirmability throughout the investigative process to ensure data trustworthiness. Trustworthiness reflected the reader's confidence in the study's importance and worth (Stahl & King, 2020). Saturation was essential for thorough and in-depth qualitative data collection (Rahimi & Khatooni, 2024). It occurs when additional data no longer reveals new themes, insights, or information, indicating that the phenomenon has been sufficiently explored (Ahmed, 2024). Saturation was marked by repetitive data and the lack of new themes or patterns (Morse et al., 2020). Researchers analyze data iteratively during collection to determine when further data no longer produces new insights

(Rahimi & Khatooni, 2024). A thorough evaluation was conducted to ensure trustworthiness of this study, assessing its credibility, transferability, dependability, and confirmability.

Credibility

Credibility is a component of trustworthiness in qualitative research that describes how well the findings represent the participants' experiences (Ahmed, 2024). It is established through strategies such as extended engagement, ongoing observation, triangulation, and reflexivity. These methods help ensure that the results are dependable and accurately reflect participants' actions, beliefs, and experiences (Ahmed, 2024). Credibility was confirmed through triangulation and member checking (McKim, 2023). This process allowed participants to verify the accuracy and authenticity of the transcripts. It also provides a structured approach, including interview questions and data analysis steps, for member-checking that minimizes weaknesses and emphasizes strengths (McKim, 2023). Moreover, direct quotes in the findings section enhance the credibility of the data by providing clear evidence that reinforces the emerging themes (Eldh, 2020).

Transferability

Transferability is a crucial aspect of trustworthiness in qualitative research, referring to the extent to which the study's findings can be applied or generalized to other contexts, settings, or populations (Ahmed, 2024). This is achieved by providing detailed contextual information and thorough descriptions of the research environment, participants, and methods, enabling readers to assess whether the findings are relevant to their situations (Haq et al., 2023). Thick descriptions provide detailed contextual information to help readers determine whether the findings can be transferred or applied elsewhere (Haq et al., 2023). Giving a comprehensive overview of the research setting, participants, and methods enables readers to compare their context with the

study, helping them decide if the results are applicable and relevant to their specific circumstances (Riazi et al., 2023).

This study's findings were based on the experiences of 10 doctoral students regarding their involvement in completing their doctoral studies. While qualitative research generally does not seem transferable to other contexts, it also provided a comprehensive description of the participants, their settings, and the research methodologies employed in this study. These detailed accounts enable other researchers and practitioners to assess how the findings might apply to their contexts (Haq et al., 2023). However, this study focused on doctoral students' experiences during the completion process, specifically those who completed their studies in the USA at various universities and across different fields of study.

Dependability

Dependability is essential for building trustworthiness in qualitative research because it emphasizes the consistency and stability of results over time (Ahmed, 2024). Achieving this requires detailed documentation of research methods and decisions throughout the study (Ahmed, 2024). Keeping organized records of each step ensures transparency, allowing others to replicate the study or evaluate the dependability of the results by following the same procedures and understanding the reasoning behind each choice (Haq et al., 2023). An audit trail involves maintaining a comprehensive log of research decisions, changes, and data analysis methods. This practice enhances traceability and transparency, enabling others to understand the rationale behind decisions and assess the reliability of the findings (Eryilmaz, 2022).

Detailed descriptions of the recruitment process, data collection, and data analysis were incorporated to facilitate the study's replication. A standardized semi-structured interview protocol was adhered to during each interview, ensuring consistency in data collection while

allowing for elaboration based on individual participants' responses (Ranney et al., 2015). Field testing involved experts reviewing the interview questions and protocol to ensure clarity, relevance, and comprehensiveness. These experts provided feedback and recommendations to refine the interview guide, ensuring it accurately represented the key concepts being examined and avoided awkward phrasing. The field test aimed to validate the research instruments, ensuring they were well-designed, practical, and capable of producing rich, detailed data that accurately reflect participants' experiences. Feedback from field testers was used to revise and finalize the interview guide, enhancing its effectiveness in capturing the needed information. PowerPoint slides were incorporated into the interview protocol to help participants visually illustrate their doctoral journeys. The slides served as a discussion framework, encouraging engagement and offering a visual structure for participants to share their insights and experiences. Participants reviewed the slides during the demographic section of the interview, which helped set the context for discussion. Both tools were essential to ensuring the data collection process is thorough, effective, and participant-centered. Furthermore, an audit trail was maintained throughout the research process, documenting decisions, modifications, and reflections to uphold accountability and methodological rigor (Johnson et al., 2020).

Confirmability

Confirmability is a vital aspect of trustworthiness in qualitative research, referring to the extent to which findings are shaped by participants' experiences and perspectives rather than by the researcher's biases or personal preferences (Ahmed, 2024). It helps promote objectivity and fairness throughout the research process. Peer debriefing involves colleagues or experts reviewing interpretations and providing alternative viewpoints, which helps validate findings and minimizes researcher bias (Rose & Johnson, 2020). Member checking allows participants to

review and confirm the accuracy of the findings, ensuring their views are accurately represented and thereby increasing confirmability (Lincoln & Guba, 1985; Rose & Johnson, 2020). Keeping a reflective journal to document personal thoughts, biases, and reflections throughout the study fosters transparency and reduces subjectivity (Lincoln & Guba, 1985; Rose & Johnson, 2020).

Reflexivity

Reflexivity proved crucial, as the researcher consistently reflected on personal biases and their potential influence on data interpretation. Recognizing the researcher's background as an educator, conscious efforts were made to separate personal experiences from the data by focusing solely on participants' perspectives. Additionally, maintaining an audit trail enhances confirmability by offering a clear record of the methods used to reach the study's conclusions.

Saturation

Saturation is crucial for comprehensive and detailed qualitative data collection (Rahimi & Khatooni, 2024). It occurs when additional data no longer reveal new themes, insights, or information, signaling that the phenomenon has been sufficiently explored (Ahmed, 2024). Saturation is characterized by repetitive data and the absence of new themes or patterns (Morse et al., 2020). Researchers analyze data repeatedly during collection to determine when further data ceases to generate new insights (Rahimi & Khatooni, 2024).

Results

I employed a qualitative, interpretive, descriptive design, which is suitable for an applied, practice-based dissertation (National University, 2021; Thorne, 2016). The study population comprised doctoral students who had completed their studies in the United States. A purposive sampling method was used to select participants with relevant experiences and insights regarding their doctoral studies. Although the original proposed aim was to recruit 10 to 15 participants,

only 10 completed the interview. Additionally, participants were encouraged to disseminate the study details to other doctoral students who met the eligibility criteria. Despite these efforts, the final sample of 10 participants yielded rich, detailed data that achieved data saturation and effectively addressed the research questions.

This descriptive qualitative study involved 10 doctoral participants who completed their doctoral studies in the United States in 2022 and 2023. They came from different fields of study at various universities and had diverse cultural backgrounds. Data was collected through individual semi-structured interviews, using the same questions for all participants, as well as an anonymous online questionnaire. The sample population comprised individuals from diverse backgrounds, including African Americans, Hispanic Americans, Caucasian Americans, and female doctoral degree holders (Table 2). Data collection interviews were scheduled and conducted via Zoom one-on-one between April 14, 2025, and April 28, 2025 (Table 1).

Table 1

Interview Schedule

Date	Time	Participant #	Interview Type	Length
04-14-25	11:00 AM	1	Zoom	1:04:01
04-14-25	12:00 PM	2	Zoom	0:47:03
04-21-25	10:00 AM	3	Zoom	0:29:55
04-21-25	12:30 PM	4	Zoom	0:38:12
04-21-25	2:00 PM	5	Zoom	0:54:00
04-21-25	3:30 PM	6	Zoom	0:41:22
04-24-25	1:00 PM	7	Zoom	0:34:0
04-24-25	2:30 PM	8	Zoom	0:55:10

04-28-25	2:30 PM	9	Zoom	0:49:33
04-28-25	5:30 PM	10	Zoom	0:27.36

Demographic characteristics were measured, including motivational and financial factors, the number of children at home, marital status, geographical location, academic institutions, and the degree of self-determination regarding their doctoral studies. The demographic data collected from participants provided comprehensive insights while maintaining confidentiality, thereby enhancing understanding of the research topic. The goal of the sampling process was to gain an in-depth understanding of the factors influencing doctoral students' persistence in completing their studies, based on their personal experiences. The diverse sample enabled the examination of multiple factors influencing doctoral students' motivation, productivity, and success (van Rooij, 2021). Table 2 summarizes the demographic characteristics of the study participants, clearly illustrating the population under investigation. This extensive demographic data enriched the study by offering nuanced insights into how these factors collectively shaped perspectives on the barriers and challenges encountered at various stages of the completion process.

Table 2

Participants Demographic

Participant (P)	Rase/Cultural Background	Gender	Birth Year	University	Discipline	Years of Completion
P-1	Black-American	Female	1996	Colorado State University	History	3 Years
P-2	Caucasian	Male	1993	University of Maryland	Mechanical Engineering	4 Years
P-3	Spanish	Male	1986	Florida State University	Business	3 years
P-4	African American	Male	1992	University of Michigan	Computer Science	5 Years
P-5	Black American	Male	1999	University of Texas	Accounting	4 Years

P-6	African American	Female	1994	University of San Diego	Human Resources	2 ½ Years
P-7	Black America	Male	1995	Texas University	Arts	4 Years
P-8	Black American	Male	1996	University of NY	Accounting	3 Years 7 Months
P-9	Unknown	Male	1985	University of NY	Psychology	4 Years 4 Months
P-10	African American	Male	1990	Walden University	Business	5 Years

Note: The table summarizes the participants' demographics. The data captured included cultural background, birth year, gender, academic institution geographic location, and years of completing their doctoral degree.

The study involved 10 participants from diverse cultural backgrounds and academic disciplines, representing universities across the United States. Participants included African Americans, Hispanic Americans, Caucasian Americans, and female doctoral degree holders. They completed their PhD degrees in 2.5 to 5 years, which is shorter than the typical 5 to 7 years for PhD programs (NU, 2025). The sample covered a range of fields, including History, Mechanical Engineering, Business, Computer Science, Accounting, Human Resources, Arts, and Psychology. Participants varied in age, marital status, and family responsibilities, providing insights into how these factors influenced their persistence and success. They were recruited from universities nationwide, offering a broad perspective on doctoral experiences. PhD students who completed their degrees in less than the average time often demonstrate high motivation, effective time management, and access to strong support systems, such as mentors, funding, and institutional resources (Young, 2029). Fields such as STEM, including Engineering and Computer Science, tend to have shorter completion times due to structured programs, available funding, and clear career paths (Pester et al., 2023). However, P2 and P4 were unable to

complete their studies on time because they found difficulties during the dissertation stages (see Table 2). Humanities and social sciences often take longer due to extensive research requirements and limited funding (Pester et al., 2023). Participants included both domestic and international students with varying levels of financial and family support. Underrepresented groups often face additional challenges, including systemic barriers and financial constraints (Deckard et al., 2022). Students who complete their degrees more quickly typically benefit from well-funded programs, access to research resources, and supportive academic environments (Sa, 2023).

Completion time in both the study sample and the general population was faster for those who earned their PhDs in STEM, and they shared traits such as strong motivation, effective time management, and access to support systems (Young, 2019). Fields like STEM were prominent in both groups (the younger, born in 1990 and later, and the older, born before 1990), as they offered structured pathways and funding that facilitated quicker completion (Marshall, 2017). However, all participants faced common challenges, including financial barriers, time management issues, and discipline-specific constraints, which were prevalent across both groups in the study sample. This sample highlighted these challenges in more detail (Van Rooij, 2021). The academic support systems, including emotional, financial, and support from family, peers, and mentors, were crucial for both groups, fostering resilience and persistence. This study's diverse sample provided a focused view of the experiences and motivations (both internal and external) of doctoral students who graduate faster than average, aligning with broader trends in the PhD population while offering nuanced insights into the factors that influence persistence and success (Litalien, 2024).

The interview protocol included 21 open-ended questions. These questions were organized to encourage participants to share their individual experiences, insights, and reflections regarding the completion process of their doctoral studies. The interviews were conducted in a conversational format and lasted approximately 30 to 60 minutes, allowing participants ample time to respond thoughtfully and thoroughly. I employed thematic analysis because it is well-suited to qualitative descriptive studies, combining flexibility, systematic rigor, and a focus on data-driven insights to produce rich, detailed descriptions of phenomena (Naeem et al., 2023). With that, I choose Braun and Clarke's (2006) thematic analysis, which adheres to the six-step approach, as it is appropriate for qualitative descriptive studies. This approach offers a flexible, systematic, and accessible method that aligns to provide rich, data-driven descriptions of participants' experiences. The process encompassed the following steps:

Familiarization

I engaged extensively with the interview transcripts, reading and re-reading the data multiple times. This step facilitated a comprehensive understanding of the participants' perspectives, enabling the identification of initial impressions and patterns within their responses.

Generating Codes

I systematically coded the data by identifying and tagging recurring ideas, phrases, and patterns within the transcripts. Codes were developed to capture meaningful units of information that aligned with the study's focus. In total, 128 distinct codes were generated from the transcripts.

Developing Themes

After completing the coding process, I grouped related codes to form broader themes that encapsulated key concepts and patterns evident in the data. This process necessitated careful analysis to ensure the themes accurately reflected the participants' narratives.

Reviewing Themes

I meticulously reviewed and refined each theme to ensure it was well-defined, distinct, and firmly grounded in the data. This step involved revisiting the original transcripts to confirm that the themes accurately represented the participants' responses.

Defining and Naming Themes

Each theme was clearly defined and labeled to reflect its central idea. Additionally, subcodes were identified to provide further detail and specificity within each theme.

Synthesizing and Reporting

The final step involved synthesizing the themes and summarizing the findings. This process included organizing participant responses within a structured framework to illustrate the prevalence and significance of each theme. A spreadsheet was used to systematically compare responses to individual questions and across the entire dataset, facilitating the identification of patterns and relationships within the data.

This study employed thematic analysis to identify the primary obstacles and challenges doctoral students encounter throughout their academic journey. It also outlined various barriers to program participation and reasons for dropping out, and suggested strategies to maintain engagement and motivation. The results offer a comprehensive understanding of doctoral students' experiences and perspectives, effectively addressing the research questions and contributing to the broader body of knowledge.

In this study, the objective was to address two primary research questions along with their corresponding sub-questions. The findings of this study were systematically organized and presented in response to the three primary research questions. The thematic analysis identified emergent themes and subcodes from participants' responses. Furthermore, this section includes detailed demographic information about the participants, thereby ensuring a comprehensive understanding of the context in which the data were collected.

This study examined how fulfilling the three basic psychological needs, autonomy, competence, and relatedness, supports better decision-making by shaping student behavior. The findings were organized into main themes that emerged from the coding process, each highlighting different aspects of the research questions. These themes included motivational factors, challenges and obstacles, support systems, persistence, and resilience. Each theme is defined with relevant codes, supported by participant quotes, and analyzed to identify similarities and differences in individual perspectives. This structured approach enabled a clear presentation of the results, facilitating an understanding of how various factors influence doctoral students' persistence in completing their studies.

Research Question 1: What do doctoral students perceive impacted their persistence at distinct stages (coursework, capstone, or dissertation) of their program?

While financial constraints, family support, and discipline limitations were common themes across disciplines, the specific challenges and motivators reported by participants varied by field of study. For instance, technical challenges were more prominent in engineering, while representation and empowerment were key factors in business management (see Table 3). This study did not directly compare how participants' perceptions of the factors influencing persistence differed across disciplines. However, based on transcript analysis, the following

information is provided: In response to RQ1, seven key themes emerged, each playing a significant role in understanding the barriers. Participants identified factors affecting their persistence during doctoral studies. Nearly all participants provided insights supporting each of these seven themes. The themes are: (a) Personal Factors, (b) Time Management, (c) Financial Barriers, (d) Discipline Constraints, (e) Support System Role, (f) Motivation, and (g) Self-Determination Theory (Table 3). This study did not directly compare how participants' perceptions of the factors influencing persistence varied across disciplines. However, based on transcript analysis, the following information is provided: In response to RQ1, seven key themes emerged, each playing a significant role in understanding the barriers participants identified as affecting their persistence during doctoral studies. Nearly all participants provided insights supporting each of these seven themes. The themes are: (a) Personal Factors, (b) Time Management, (c) Financial Barriers, (d) Discipline Constraints, (e) Support System Role, (f) Motivation, and (g) Self-Determination Theory. Table 3 summarizes the codes and themes derived from responses to the first research question.

Table 3

Codes and Themes for RQ1

Disciplines	Code	Themes
History: P10	Financial Issues	Financial Barrier
	Balancing work with studies	Time Management
	Challenges in Methodology	Disciplines Constraint
	Challenges in Data Analysis	Disciplines Constraint

	Support from peers	The Role of Support System
	Support from family	The Role of the Support System
Mechanical-Engineering: P9	Mythology Challenges	Discipline Constraint
	Data Analysis	Discipline Constraint
Resourcing: P8	Expanding Knowledge	Motivation
	Challenges in Methodology	Discipline Constraint
	Support from the Family	Role of the Support System
	Career Prospect	Motivation
Computer Science: P7	Financial Challenges	Financial Barrier
	Importance of relationships	The Role of Support System
	Sense of Belonging	Self-Determination
Accounting: P6, P5, P4	Financial Challenges	Financial Barrier
	Family Responsibility	Role of the Support System
	Personal Growth	Motivation
Business Management: P3	Self-Doubt	Motivation
	Lack of Black Professionals	Personal Factors
	Family Support	Role of the Support System
	Desire to Empower	Motivation
Psychology: P2	Data Collection Challenge	Discipline-Specific Challenge
	Family Support	Role of Support System
	Sense of Belonging	Self-Determination

Art: P1	Work-Life Balance	Time Management
	Financial Issues	Financial Constraint
	Balancing Work-Life	Time Management

Theme 1: Personal Factors. Personal factors significantly hindered doctoral students' persistence. They were categorized under the following subcodes: aspiration for a doctoral or PhD degree, self-motivation, psychological well-being, self-doubt, and anxiety. These personal factors highlighted how individual experiences and traits could influence doctoral students' decisions to continue or withdraw from their academic pursuits. Many participants, including P1, P2, P6, and P7, cited financial difficulties as a significant obstacle during their academic journeys. Motivational challenges often arose from low self-confidence or fears about competing or performing alongside peers. Numerous doctoral students shared experiences of doubting their abilities, which led them to hesitate to participate in or continue their studies and ultimately abandon the process due to perceived shortcomings. This internalized pressure caused many to withdraw from opportunities that could have offered valuable educational, social, and developmental benefits. Additionally, social anxiety intensified these issues, as participants felt uncomfortable in group settings or environments where they sensed scrutiny from peers or faculty. Fear of failure and feeling intimidated by more skilled or accomplished colleagues also emerged as significant barriers to ongoing involvement. Many participants emphasized motivational challenges as a constant hurdle. For example, P4 mentioned internal and external factors, including personal growth, career opportunities, and the desire to solve real-world problems. P4 stated that" I used to worry about my learning performance, as I noticed that many of my fellows/peers receive mentorship and training throughout the year". Despite his talent and

consistently improving skills, he did not want to disappoint his family and colleagues who had left their programs to support him. Such feelings of inadequacy have led some doctoral students to avoid learning activities they once enjoyed or to refrain entirely from participating.

Social anxiety was another personal factor that many participants in this sample believed negatively impacted their persistence. When asked about potential anxiety regarding participation in learning activities, participant P4 shared, “I was aware of possibly embarrassing feelings about what other people might have thought about me failing to participate in social activities with peers or student fellows. Another participant mentioned an additional layer of stress that arose from after-school activities, such as meeting with peers/friends. P3 stated, “Sometimes, I felt anxious and feared social gatherings because I always thought about my schoolwork performance, which was getting poor. Furthermore, such stress had impacted my work (job) and daily routine.” These insights demonstrate how perceived social judgment can influence students’ willingness to pursue extracurricular opportunities and the stressors associated with completing their doctoral studies and participating in them. This theme highlighted the substantial influence of personal factors on doctoral students' participation in after-school activities, persistence, and success.

Theme 2: Time Management. Challenges in time management emerged as a key factor affecting doctoral students' persistence in their fields. Participants, such as P1 and P5, highlighted the importance of effective time management in balancing research, writing, and various responsibilities. Each participant from P1 to P10 encountered unique challenges in managing their time during their doctoral studies. This theme encompassed subcodes such as academic pressure, family responsibilities, and scheduling conflicts, highlighting the challenges participants faced in balancing multiple commitments during their educational journey. The

demands of academia often require students to focus on intensive coursework and maintain high performance, which limits their availability for additional activities. Scheduling conflicts, caused by overlapping obligations among university, work, and personal interests, further complicate the situation by hindering participation in various pursuits. Participants illustrated how they balance family responsibilities by navigating amid competing demands, often limiting their involvement in after-school activities.

Participants identified institutional pressure as a significant hindrance to keeping up with scheduling mentoring and advising them during school hours. P5 indicated, " I found difficulty balancing my life, education, and family as daily routine created a significant barrier that had affected my persistence in completing my doctoral studies, but my internal motivation arose, and with family support, I finally achieved my personal and academic goals." This highlighted the challenge of balancing academic responsibilities with extracurricular activities. With that, P7 remarked, “There is also pressure to excel academically and athletically during dissertation data collection and writing, which was overwhelming.” These examples illustrate how the increasing academic demands and expectations within a doctoral program have limited students' time and energy to connect with their mentors, chairs, and peers. Additionally, family responsibilities further restricted their participation. As P6 stated, "I am a single mom, I must care for my child, considering what my son would experience if I did not focus on him." Such insights underscored how the dynamics and responsibilities of doctoral/PhD students' families created logistical challenges for their engagement and kept each of them satisfied.

Sometimes scheduling or managing students’ time conflicts intensifies time constraints. P8 mentioned, "If I had a robotics competition on the weekend that coincided with my family gathering, I would need to skip the family gathering because it could give me more stress."

Expanding on that, P10 stated, “while working on my dissertation, football practices and watching football games at family gatherings began to conflict with family obligations, making it more difficult for me to balance both, continue my education, and manage family responsibilities with such choices.” These examples illustrated how conflicting schedules and overlapping commitments disrupted regular study habits.

Theme 3: Financial Barriers. Financial barriers presented significant challenges for doctoral/PhD students, affecting their ability to enroll, persist in their studies, and ultimately complete their degrees. Key aspects of this theme included tuition fees and the cost of educational materials. The steep costs of doctoral programs could discourage prospective students from enrolling or forcing them into substantial debt. For example, P10 stated, “I was under financial constraints during my doctoral degree completion process, which was a significant hurdle in my educational journey.” Some doctoral students had to balance work alongside their studies to navigate these challenges. Many PhD students rely on stipends, grants, or fellowships that often do not fully cover their living expenses, leading to financial stress. P6 added that “I had financial issues, which became a significant barrier, especially after the loss of my mother, and I feared that it would diminish my motivation and academic readiness”. Doctoral/PhD students attributed their ability to continue their studies to administrative support and financial aid. Students from lower-income backgrounds often enter doctoral programs with preexisting undergraduate debt, further complicating their financial stability. P2 stated, “I suffered financial hardships throughout my academic experience, resulting in stress, low motivation, frustration, and fear of losing my persistence”. Furthermore, P2 stated, “I noted that my family doubled their efforts to support me and my brother while we were both pursuing our doctoral degrees concurrently. Our financial limitations hindered access to essential academic

resources, such as travel to conferences, buying research materials, and opportunities for professional development". P2 reiterated that "my financial struggles during my academic journey, highlighting the associated stress and frustration, the support that my family provided was unbelievable; they wanted to see me to successful in my educational journey". Underrepresented groups, including women and minorities, frequently face heightened financial obstacles due to systemic disparities in funding and assistance (Cruz et al., 2023). P1 remarked that "managing finances was my most significant challenge in balancing work with my doctoral study, emphasizing the importance of managing my time and making sacrifices to overcome financial issue". Many PhD and doctoral students take on additional jobs to support themselves, which can adversely affect their research study progress and overall well-being. P3 identified that "I had financial difficulties as a significant facing challenge in completing my degree. I relied on the financial support from my family to persevere through these challenges". Financial barriers emerged as a recurring theme, with participants highlighting the stress and sacrifices necessary to balance their academic and personal lives. Assistance from family, communities, student loan initiatives, and administrative resources was crucial in helping doctoral students overcome financial obstacles.

Theme 4: Discipline Constraints. Discipline constraints refer to the challenges encountered in specific academic fields or methodologies, illustrated by participants' experiences of facing and overcoming these obstacles (Jilcha, 2025). The field of study significantly influences PhD students' persistence, with several crucial factors at play. For example, disciplines such as science, technology, engineering, and mathematics benefit from greater availability of research grants and assistantships. Conversely, students in the humanities and social sciences often struggle with limited financial resources (NSB, 2020). Take participant P9,

who stated, “I dealt with technical issues during writing chapters 2 and 3 of my mechanical engineering dissertation. I overcame these difficulties through my professor's support, resilience, and focus. If my mentor/chair had not helped me at that stage, it would have impacted my persistence in completing my study”.

Specific fields of study require extensive lab work or field research, which can be time-consuming and physically demanding, ultimately impacting a student's persistence. Participant P4 highlighted, “I encountered some challenges during my dissertation with research methodology. I am pursuing a PhD in accounting, with a focus on quantitative research and statistical analysis. I had to reduce the sample size to avoid bias and ensure data quality, which demanded considerable effort and persistence for me”. Additionally, some fields of study, such as engineering and medicine, with clear career trajectories, encourage greater persistence among students, whereas the unpredictability of academic job opportunities can dissuade students in other areas of interest. Participant P2 stated, “I found chapter 4 difficult because it focused on data collection, which was the most daunting part of my psychology doctoral journey, requiring me substantial effort and presenting numerous challenges, such as methodology and data collection”. The availability of mentorship varies by discipline, with distinct streams of mentoring scholarship identified, including academic mentoring, significantly affecting students' ability to navigate challenges and maintain motivation (Eby et al., 2008). The document describes mentorship availability as varying by discipline, with distinct streams of mentoring scholarship identified: youth mentoring, academic mentoring, and workplace mentoring.

Specific fields, such as social science, medicine, and engineering, have high publication demands that can pressure students, negatively affecting their mental health and persistence. Furthermore, students in evolving or interdisciplinary fields may encounter challenges regarding institutional

support and recognition, which can hinder their perseverance. Participant P3 shared, “I experienced being a minority in a rigorous business management program, discussing the bureaucratic hurdles. I refined my research focus, particularly in inclusive leadership.

Theme 5: The Role of Support Systems. Support systems are crucial for the persistence and completion of doctoral students. The importance of academic, family, and peer support systems became clear in discussions, as participants frequently emphasized how family, peers, mentors, and administrative support enable students to navigate their doctoral journeys (Merga & Mason, 2021). P9 highlighted the essential role of support from peers, family, and administrative staff in his academic perseverance. By building positive relationships with colleagues and staff, P9 stated, “I felt more capable and empowered in my decisions as I consistently recognized that emotional, financial, and academic support, family, peers, mentors, and institutional staff were vital for me to overcome financial strain, self-doubt, and academic obstacles. P10 pointed out that “I received significant help from my peers and family, which greatly supported me both financially and emotionally, enhancing my sense of belonging and overall resolve”. P8 expressed, “I am grateful for the encouragement and support from friends and colleagues, which helped me overcome hurdles during my three-year PhD journey.”

Support systems were portrayed as sources of motivation, encouragement, and practical help, enabling students to stay focused and resilient. P7 attributed “I had a strong relationship and a sense of belonging during my study, and I found such a support system was a critical component of my academic journey, emphasizing the importance of perseverance and connections in overcoming challenges”. P2 shared “how my family increased their support for me and my brother to complete our degrees together. I acknowledged the encouragement from classmates, which motivated me to persist despite financial hardships”.

Positive relationships with advisors and mentors provide guidance, motivation, and academic assistance, significantly influencing persistence (Cockrell, 2008). P6 noted “the significance of administrative and financial aid, as well as my sense of belonging with peers, were crucial factors in my perseverance. During challenging times, I mostly relied on my family for emotional support.” Engaging with fellow students fosters a sense of belonging, reduces isolation, and provides emotional and intellectual support (Rigler et al., 2017). P5 stated, “the impact of family, friends, and community support on my persistence and participating in workshops, webinars, and building peer relationships enriched both my academic experience and personal growth. P3 pointed out, “I sought help from mentors, family, and spiritual leaders to tackle self-doubt, financial struggles, and feelings of isolation”. He particularly noted the influential mentorship from Black faculty members that contributed to his perseverance.

Family and friends' encouragement can alleviate stress and provide stability, whereas a lack of support can hinder progress (Walsh et al., 2023). Access to funding, mental health services, writing centers, and career counseling enhances students' abilities to face challenges (Cockrell, 2008). P1 acknowledged that “my success stemmed from the support of family, friends, and colleagues, which helped me overcome obstacles and stay focused on my goals.” Virtual communities and online resources help doctoral students maintain connections, particularly in online programs (Rigler et al., 2017). However, the support system is vital to participants' persistence, providing them with the emotional, financial, and academic resources needed to overcome obstacles and complete their doctoral degrees.

Theme 6: Motivation. Motivation is crucial for doctoral students, as it significantly affects their ability to persist and complete their studies (Litalien, 2024). This theme is a focal point in the document and influences students' commitment to earning their degrees. Participants

highlight both internal and external motivators that drive their academic paths. For example, P10 stated, “I was inspired by my career goals and the ambition to be the first in my family to obtain a doctorate degree”. She described her determination as steadfast, mentioning that she navigated financial challenges while balancing work and studies. Motivation is vital to maintaining doctoral students' academic efforts. P9 stated, “I was motivated by expressing my aspiration to pursue education beyond a bachelor's or master's degree. My motivation helps me to stay focused, fostering a strong sense of persistence.” Data indicate that intrinsic motivation, spurred by goals for career advancement, mastery of the subject, and self-actualization, significantly boosts students' resilience. P7 said, “I sought to advance my educational career and contributed to the field of computer science. I emphasized the necessity of perseverance in the face of financial and academic challenges”. Similarly, P5 pointed out that “I aimed to deepen my grasp of accounting theories and prepared to become a qualified tutor, stressing the importance of consistency and managing education alongside family responsibilities.” Key factors, such as autonomy, purpose, self-determination, and problem-solving abilities, are essential for overcoming challenges and withstanding the intense demands of a doctoral program (Litalien, 2024). Thus, P4 stated, “I emphasized the importance of prioritizing my personal growth and addressing real-world problems.” Furthermore, motivation closely relates to self-efficacy, a sense of belonging, and the perceived value of one's academic endeavors. P3 said, I am dedicated to my learning, breaking down barriers in my community, and addressing the obstacles minority-owned businesses face. Despite grappling with self-doubt, impostor syndrome, and financial difficulties, he persists by leaning on support from mentors and family.

Students often remain committed when they believe in their abilities, feel connected to their academic community, and recognize the relevance of their research to their field of study.

P2 pointed out that " I have found motivation to engage in significant projects and pursue employment opportunities at the same time, but it was not so easy." Additionally, P1 stated, "I drew inspiration from personal (internal) and external sources, including the desire to compete and progress in my doctoral study." He has demonstrated persistence throughout his educational journey, effectively managing work, finances, and time. Gaining insight into the motivational factors behind these elements can help institutions.

Theme 7: Self-Determination. Self-determination serves as a crucial framework for understanding the resilience and achievements of doctoral and PhD students (Litalien, 2024). SDT, as the guiding framework for this study, has been examined through three key elements: autonomy, competence, and relatedness, which reflect participants' behavior in their academic endeavors. Understanding self-determination is crucial for the persistence of doctoral and PhD students, as it affects their ability to overcome challenges and complete their programs. Research indicated that intrinsic motivation, autonomy, and a strong sense of purpose significantly enhance resilience among Ph.D. and doctoral students (Chamadia & Qureshi, 2021). Moreover, career advancement, mastery of their field, and pursuing self-actualization are crucial in maintaining students' determination. Integrating self-determination theory with self-efficacy and adult learning theories also elucidates how students sustain high motivation levels despite facing barriers (Hamilton, 2023).

RQ1 Results and SDT. The findings of this study were explored within the context of Self-Determination Theory (Deci & Ryan, 2008), which identified three essential psychological needs: autonomy, competence, and relatedness. These aspects are crucial for understanding the persistence, productivity, and success of doctoral students.

Autonomy, as involved in this study, refers to the capacity to make independent choices and direct one's academic experience (Sun, 2024). The findings indicated that autonomy was significant during the middle and final stages of doctoral programs. In the middle stages, autonomy was critical for developing research proposals and collecting data, as students made independent decisions about their research focus and methods. Participants highlighted their control over their decisions, facilitating their ability to overcome challenges (Rayn & Deci, 2020). In the final stages, it required energy, effective time management, and informed choices regarding dissertation writing and defense, which necessitated autonomy and independence. Participants noted that possessing autonomy allowed them to balance their professional obligations with academic requirements effectively.

Competence, as referred to in this study, refers to confidence in one's skills and the ability to face academic challenges. The findings showed that competence was vital throughout all stages of doctoral programs. In the early stages, competence was found to be fundamental for acquiring foundational knowledge and technical skills, especially in STEM fields. Students in technical areas emphasized the importance of competence in grasping complex concepts and keeping up with technological changes. In the middle stages, it was essential for navigating research methods and statistical analyses, particularly in fields such as psychology and accounting. In the final stages, Competence had a significant impact on dissertation writing and defense, fostering a sense of readiness and self-assurance among students.

Relatedness signified the feeling of belonging and connection to peers, mentors, and family. The findings consistently emphasized the importance of relatedness in sustaining persistence. In the early stages, it was crucial to provide emotional support during coursework and comprehensive exams, helping students form connections and alleviate feelings of isolation.

In the middle stages, it provided guidance and support during the creation of research proposals and data gathering. Participants relied on relationships with peers and family support to overcome obstacles. In the final stages, relatedness was the key element for receiving emotional and academic support throughout the writing and defense of dissertations. Participants noted how mentors and peers bolstered their confidence and provided practical assistance.

Research Question 1a: How do the perceptions of factors influencing persistence differ across disciplines?

The analysis revealed that doctoral students across fields face common challenges, including financial issues, time management, and personal commitments; however, the specific obstacles and incentives vary by discipline.

Theme 1: Financial Barriers. Several codes indicated that financial barriers were a theme, including tuition expenses, limited stipends, juggling work and studies, and financial strain (Table 3). Several participants reported that finances were a significant concern. For example, Participant P1 (Art) stated, “Managing finances was my greatest challenge while balancing work with my PhD studies. Time management and sacrifices were key to overcoming this issue." Furthermore, finances were compounded by life circumstances, as for Participant P6 (Accounting), who explained, "Financial issues became a major barrier, particularly after losing my mother. Support from administration and financial aid enabled me to continue." Finding support was a key aspect of this theme, as explained by participant P2 (Psychology), who stated, "My family doubled their efforts to support me and my brother as we pursued our degrees simultaneously."

Theme 2: Time Management. Several codes indicated that time management was a theme, including juggling academic, personal, and professional duties, scheduling conflicts, and

institutional demands (Table 3). Time management was a struggle for participants who relied on their own motivation and family support to persist. Participant P5 (Accounting): "Managing my education, family, and life created significant barriers that impacted my persistence, but my internal motivation and family support helped me reach my goals." Competing obligations were part of this theme, as explained by participant P8 (Human Resources), who said, "If I had a robotics competition scheduled for a family gathering weekend, I would have to miss the gathering." Participant P10 (History) added, "Football practices coinciding with my education and family obligations made it challenging to balance everything."

Theme 3: Discipline Constraints. Several codes indicated that discipline constraints were a theme, including technical difficulties, research methodology, data collection, and representation concerns (Table 3). Participant P9 (Mechanical Engineering) stated, "I faced technical problems in chapters 2 and 3 of my dissertation. Resilience and support from my professors helped me navigate these challenges." P9 provides a strong example of persistence by saying, “The importance I placed on a supportive network. Chapters 2 and 3 encountered technical difficulties, especially in the literature review and methodology sections”. Although this could be disheartening, doctoral students did not let these hurdles hinder their progress. Their determination, reinforced by their professors' encouragement, highlighted their commitment and character.

Finding support was a key aspect of this theme, as participant P4 (Computer Science) explained: "Issues with research methodology, especially in quantitative research and statistical analysis, required significant effort to mitigate sample bias and ensure data quality." This presented a major challenge and underscored the importance of thorough analysis and perseverance. Managing quantitative methods and reducing sample bias involved more than just

handling data; it required protecting the integrity of the entire study. Addressing these challenges directly, especially in high-pressure situations with increased expectations, illustrates not only technical expertise but also a deep commitment to ethical research. Additionally, participant P3 (Business Management) pointed out, "I encountered representation issues, like the scarcity of Black professionals in leadership roles, which affected my motivation and persistence." This observation highlighted both personal and broadly systemic concerns. The absence of representation in key decision-making arenas gradually awakened the resolve of even the most determined individuals. It went beyond simple visibility; it involved a sense of belonging, hope, and recognition of one's potential, as reflected in those who had preceded them.

Doctoral students demonstrated resilience in the face of this void, highlighting their academic drive and emotional strength. This aspect of the doctoral journey warranted recognition, whether privately or publicly, if they had chosen to share it. Doing so could strengthen their dissertation and enrich their acknowledgments, inspiring future Black scholars to realize they were not alone in confronting these unseen challenges.

Theme 4: Motivation. Several codes were assigned to the theme of motivation, including career growth, personal development, a desire to address real-world issues, and empowerment (Table 3). Participant P7 (Computer Science): "I aspired to advance my academic career and contribute to computer science, focusing on perseverance in the face of financial and academic hurdles." That aspiration radiated both purpose and certainty. Navigating academia, especially in fields like computer science, demanded more than intellect; it required tenacity, vision, and a firm belief in doctoral students' contributions amid financial and institutional obstacles. Analyzing this from a psychological standpoint enriched its significance. They were not only advancing knowledge; they were also redefining the understanding of perseverance in

academic settings. This objective could serve as a powerful thematic element in the conclusion of doctoral students' dissertations or future research endeavors, exploring how structural challenges affected academic trajectories and how personal and systemic resilience strategies emerged in response. This perspective not only filled a gap in literature but also resonates with real-life experiences.

Finding support was part of this theme as explained by participant P5 (Accounting), who said, "I aimed to enhance my understanding of accounting theories and prepare for a tutoring career, emphasizing consistency and balancing education with family responsibilities." Participant P3 (Business Management): "I sought to empower minority-owned businesses and dismantle barriers in my community, which drove my persistence despite self-doubt and financial strain." This statement articulated an impressive and visionary goal. Doctoral students were weaving together their intellectual development, professional insights, and personal accountability, showcasing not only their ambition but also their integrity. Their dedication to deepening their understanding of accounting theories, while embracing tutoring, demonstrated a strong commitment to both mastery and mentorship —a potent combination. Juggling these responsibilities alongside family life revealed a quiet resilience that often remained unnoticed but certainly warranted recognition. This journey could find a meaningful place in the acknowledgments section of their dissertation or their professional narrative.

Theme 5: Support Systems. Numerous codes were assigned, such as emotional support, financial aid, academic support, and peer relationships (Table 3). Participant P9 (Mechanical Engineering): "Support from peers, family, and university staff was crucial for my academic perseverance. Positive relationships bolstered my decision-making." Findings supported this theme, as participant P10 (History) said, "The assistance from my peers and family greatly

supported me both emotionally and financially, enhancing my sense of belonging." Participant P8 (Human Resources): "Encouragement from friends and colleagues helped me navigate challenges during my three-year PhD journey."

The themes and coding for RQ1a illustrate how doctoral students' persistence was influenced by challenges and motivators unique to their fields. Direct quotes from participants highlighted subtle differences across disciplines, including technical challenges in STEM fields, representation issues in business management, and the significance of emotional support in the humanities and social sciences.

Research Question 2: How do doctoral students perceive autonomy, competence, and relatedness? How does it influence their persistence at distinct stages of the program?

The themes and coding for RQ2 emerged from participants' responses, highlighting how the three components of Self-Determination Theory (Deci & Ryan, 2008) influenced their persistence throughout various phases of their doctoral journey (Table 3).

The analysis showed that autonomy, competence, and relatedness had distinct effects on doctoral students at different stages of their programs. These themes emerged from participant responses and were categorized into subcodes reflecting their experiences (Table 3).

Theme 1: Autonomy. Autonomy was interpreted differently across disciplines and stages, with its significance increased during the middle and final phases of doctoral programs. There were several codes, including independent decision-making, research focus, and control over the academic journey.

In the early stages of dissertation work, autonomy was less prominent, as students depended on structured guidance. Mentors were depended upon as Participant P3 (Business Management) explained, “During coursework, I relied on mentors to help me overcome self-

doubt and impostor syndrome." As work progressed into the middle stages of data collection, autonomy became more pronounced as dissertators were on their own during this period. Findings supported this theme, as participant P2 (Psychology) stated, "I felt a sense of control during data collection, which helped me navigate challenges and make informed decisions." As work progressed into the final stages, participants expressed that autonomy proved vital for time management and dissertation writing. In describing their efforts to complete their findings, Participant P10 (History) stated, "Autonomy was crucial for managing time and balancing professional responsibilities with dissertation writing."

Theme 2: Competence. Competence varied across the dissertation's stages. It was also significantly different across disciplines, with STEM students emphasizing technical mastery, while humanities students focused on research methodologies. Several codes were assigned to highlight this theme, including mastery of technical skills, research methodology, and confidence in abilities.

In the early stages, competence was necessary for acquiring foundational knowledge and technical skills. This was described by participant P9 (Mechanical Engineering), who explained that "Competence in understanding intricate concepts was vital for keeping pace with coursework and technological advancements." In the middle stages, competence became critical for understanding research methodologies and statistical analyses. Participant P4 (Computer Science) stated, "Competence in research methodology and statistical analysis helped me overcome obstacles and ensure data quality." Finally, in the final stages, competence played a crucial role in dissertation writing and defense. Participant P7 (Computer Science) stated that, "Competence in staying updated on technological advances was essential for my perseverance in the program."

Theme 3: Relatedness. Relatedness was consistently highlighted across disciplines, but its significance varied by field and developmental stage. Subcodes: Emotional support, peer relationships, mentorship, sense of belonging. In the early stages, relatedness was essential for emotional support and building connections. Participant P6 (Human Resources): "Peer relationships and family support helped me navigate the early challenges of coursework." During the middle stages, relatedness offered encouragement and guidance during the research proposal development and data collection processes. Participant P8 (Human Resources): "Encouragement from peers and family helped me stay persistent through data collection challenges." The final stages showed that relatedness was crucial for both emotional and academic support throughout the dissertation process. Participant P3 (Business Management): "Relationships with mentors and peers aided me in practicing my defense and boosted my confidence in presenting my research."

Research Question 2a: How does this influence differ between students at various stages in different academic disciplines?

The themes and codes related to RQ2a emerged from participants' responses, indicating variation in these factors across different academic disciplines and doctoral program stages. However, there were a few differences across disciplines, but differences were found across the stages. The following is a thorough analysis of how the themes and codes were formed, supported by participants' direct codes (Table 3).

Coding by Stages. The impact of autonomy, competence, and relatedness also varied across the early, middle, and final stages of doctoral programs. Below is a detailed analysis of participants' direct codes by stage (Table 3).

Early Stages (Coursework and Comprehensive Examinations). Participants placed less emphasis on autonomy, as students relied on structured guidance from mentors and faculty. Participant P3 (Business Management): "During coursework, I depended on mentors to help me overcome self-doubt and impostor syndrome." Participants placed competence as an essential factor for mastering foundational knowledge and technical skills, especially in STEM fields. Participant P9 (Mechanical Engineering) stated, "Competence in understanding intricate concepts was crucial for keeping pace with coursework and technological advancements."

Participants considered relatedness to be important for emotional support and building connections with peers and mentors. Participant P6 (Human Resources) stated, "Peer relationships and family support helped me navigate the early challenges of coursework."

Middle Stages (Research Proposal and Data Collection). Participants placed autonomy as gaining importance for independent decisions regarding research focus and methodology. Participant P2 (Psychology): "I felt a sense of control during data collection, which helped me navigate challenges and make informed decisions."

Participants placed a high level of competence, crucial for understanding research methodologies and statistical analyses. Participant P4 (Computer Science) noted, "Competence in research methodology and statistical analysis helped me overcome obstacles and ensure data quality."

Participants identified relatedness as a source of encouragement and guidance throughout the research proposal development and data collection process. Participant P8 (Human Resources) stated, "Encouragement from peers and family helped me persist through challenges during data collection."

Final Stages (Dissertation Writing and Defense). Participants identified autonomy as a key factor in managing time and making informed choices about dissertation writing and defense. Participant P10 (History) stated, "Autonomy was crucial for managing time and balancing professional responsibilities with dissertation writing."

Participants developed competence in dissertation writing and defense, instilling a sense of preparedness and confidence. Participant P7 (Computer Science) stated, "Competence in staying abreast of technological developments was critical for my persistence in the program.

Overview. The study's findings highlighted several key factors that influenced doctoral students' persistence, productivity, and success in completing their studies. For example, time management, including balancing academic, personal, and professional responsibilities, was a significant challenge. Scheduling conflicts and institutional pressures further complicated time management. Financial barriers, including tuition fees, insufficient stipends, and financial strain, were significant obstacles. Support from family, financial aid, and administrative resources was crucial for overcoming these challenges. Discipline constraints varied by field, with STEM students facing technical issues and humanities students encountering methodological difficulties. Representation concerns were noted in business management. Support systems, including family, peers, mentors, and institutional support, played a vital role in persistence. Positive relationships provided emotional, financial, and academic assistance. Motivation, including intrinsic and extrinsic motivators such as career aspirations, personal growth, and empowerment, was critical for persistence. Self-determination and resilience were key factors. Self-determination, including autonomy, competence, and relatedness, was essential for persistence. Autonomy was significant during research phases, competence was vital for mastering skills, and relatedness provided emotional and academic support. These factors were

organized into themes derived from participant responses, such as challenges like self-doubt, anxiety, and psychological well-being, which significantly impact persistence. Social anxiety and fear of failure were common barriers.

The study also revealed differences in challenges and motivators across disciplines and doctoral program stages. Autonomy became more important in the middle and final stages, while competence remained crucial throughout, and relatedness was consistently significant. These findings align with self-determination theory and the existing literature, offering insights into the complex interactions among academic, financial, social, and institutional factors that shape doctoral students' experiences.

This study examined differences across stages based on participants' characteristics, including age, gender, and background. It highlighted how these factors influenced persistence and experiences during doctoral studies. For example, age, including younger participants (born in 1990 or later) and older participants (born before 1990), showed differences in completion times. Younger participants often benefited from structured programs and funding in STEM fields, while older participants faced challenges such as financial barriers and systemic constraints (Marshall, 2017; Young, 2019). Gender, including female participants, such as P6, faced unique challenges, such as balancing family responsibilities and academic demands. For example, P6, a single mother, emphasized the importance of caring for her child while managing her doctoral studies. Participants from underrepresented groups, including African Americans and Hispanic Americans, often faced systemic barriers, financial constraints, and representation challenges. For instance, P3 (Business Management) highlighted the lack of Black professionals in leadership roles as a motivation and persistence challenge. These differences were discussed in the context of themes such as financial barriers, time management, and support systems,

illustrating how demographic characteristics shaped participants' experiences and persistence throughout their doctoral journeys.

Evaluation of the Findings

Insights from this research highlight the factors influencing doctoral students' persistence, productivity, and success, particularly through the lens of self-determination theory, which encompasses autonomy, competence, and relatedness. Additionally, the evaluation considered the strengths, limitations, and implications of the findings.

Participants from various cultural backgrounds, academic fields, and institutions contributed to a rich diversity of experiences. This variety enhanced the findings by revealing distinct challenges and motivators present in different areas. The results highlighted how autonomy, competence, and relatedness affected persistence at different stages of doctoral programs, particularly during initial coursework, the research proposal phase, and the dissertation writing process. The research also identified challenges encountered across disciplines, including technical issues in engineering and representation concerns in business management. Emerging themes included Personal Factors, Time Management, Financial Barriers, Discipline Constraints, The Role of the Support System, Motivation, and Self-Determination Theory, which aligned with previous research identifying similar struggles faced by doctoral students in the US and other Western countries. (Wang et al., 2024). The study's results closely correspond with existing literature, uncovering several shared themes and insights.

Motivation

The literature, including this study, emphasizes the significant impact of motivational factors on the persistence and completion of doctoral studies. Self-Determination Theory (SDT)

provides a relevant framework for understanding doctoral students' motivation, highlighting three fundamental psychological needs (competence, autonomy, and relatedness) that influence students' motivation, behavior, persistence, and well-being (Ryan & Deci, 2017). Previous studies, such as Mason (2012) and Litalien and Guay (2015), support the importance of these needs in predicting persistence and well-being. Brailsford (2010) identified intrinsic and extrinsic motives for pursuing doctoral studies, while Gardner (2010) underscored the role of self-direction and autonomy in enhancing student engagement. Furthermore, perceived progress and ownership of the doctoral project are critical for persistence, as highlighted by Marais et al. (2018) and Devos et al. (2017), who noted that these factors help prevent dropout and improve well-being.

Financial Barriers

Financial constraints emerged as a common theme across disciplines and among students enrolled in doctoral or PhD programs as they progressed through their studies and existing research (Lovitts, 2001; Sverdlik et al., 2018). Financial challenges, such as tuition costs, inadequate stipends, and existing debts, significantly impede doctoral students' progress. Buonaguro (2022) found that undergraduate students who felt prepared emotionally, financially, and academically were more likely to pursue doctoral education. Lehan et al. (2021) highlighted external factors like family commitments, financial constraints, and transfer opportunities as key influences on doctoral students' persistence, dropout rates, and intentions to leave.

Support Systems

Support systems play a vital role in the persistence and completion of doctoral studies, as demonstrated by previous research. Supervisors, peers, family, and contextual factors are

essential in this regard. For example, Devos et al. (2015) emphasized the importance of structure in guiding students through their doctoral journey, while Hospel and Galand (2016) found that structured support is the most effective in educational settings. De Clercq et al. (2019) highlighted the significant impact of peer, family, and supervisor support on doctoral students' emotions, perceived progress, and persistence, with supervisor support being the most critical.

Time Management

Effective time management is crucial for doctoral students' persistence, especially during the dissertation phase, which demands independence and self-regulation. Geraniou (2010) identified internal strategies, such as self-reliance and achievement, along with external strategies, such as social support and scholarly participation, as helpful for maintaining motivation and managing time. Castello et al. (2009) emphasized that planning and revising during the writing process can reduce anxiety and boost confidence, underscoring the importance of time management in academic work.

Discipline-Specific Challenges

Discipline-specific challenges significantly affect doctoral students' persistence and completion, as prior research has shown. Golde (2005) found that departmental cultures and practices play a major role in influencing doctoral student attrition and interest in the discipline. Mismatches in values and expectations between students and departments were identified as key obstacles. Chiang (2003) compared doctoral programs in the natural sciences and social sciences, revealing that students in the natural sciences, where teamwork research training structures are common, reported higher satisfaction and persistence. In contrast, social sciences

students, who often work within individual research training structures, faced more challenges. Rosser and Lane (2002) highlighted that female doctoral students in STEM disciplines experienced greater role conflict, lower motivation, and reduced quality of life, which negatively impacted their persistence.

Psychological Well-being

Psychological well-being is a critical factor in doctoral students' persistence. Levecque et al. (2017 reported that over half of Belgian doctoral students experienced mental health issues, such as depression and anxiety, with work-family conflict being a major predictor of psychological distress. Juniper et al. (2012 noted that high stress levels and mental health problems disrupt academic motivation and goal achievement. Wyatt and Oswalt (2013 compared mental health challenges between undergraduate and graduate students, finding that doctoral students face higher stress levels, which hinder their persistence.

Self-Determination

Self-determination is a key factor affecting doctoral students' persistence and degree completion, as explained by Self-Determination Theory (SDT). SDT highlights the importance of fulfilling three fundamental psychological needs (competence, autonomy, and relatedness) linked to motivation, well-being, and persistence (Deci & Ryan, 2008). Competence is strongly connected to persistence and well-being, as Litalien and Guay (2015) found that feelings of competence are important predictors of completing a doctoral program. Bandura (1997) emphasized self-efficacy, closely related to competence, as a motivator of achievement and persistence. Autonomy enhances ownership of the doctoral project and impacts the intention to continue, as Devos et al. (2015) noted that autonomy support from supervisors facilitates

students' internalization of their goals and fosters ownership of their projects. Relatedness fosters a sense of belonging, which is essential for persistence, as Gardner (2010) highlighted. Litalien and Guay (2015) also concluded that relatedness positively influences persistence. SDT is widely recognized as a valuable framework for understanding doctoral students' motivation and persistence (Ryan & Deci, 2017; Lynch et al., 2018; Litalien et al., 2015). Profiles lacking competence, autonomy, or relatedness are more likely to experience exhaustion, slower progress, and weaker intentions to persist.

Summary

This qualitative descriptive study aimed to attract the attention of higher education professionals and add to the literature on doctoral students' completion rates. Additionally, the study sought to contribute to existing research on the factors that affect doctoral students' persistence. A descriptive qualitative design was appropriate because the goal was to understand the factors influencing participants' persistence through their experiences with a practical problem (Doyle, 2019).

Semi-structured interviews, combined with thematic analysis, provided a comprehensive examination of the experiences of 10 participants, doctoral/PhD students who completed their studies in the USA between 2022 and 2023. Direct quotes of participants added credibility and authenticity to the results. This approach enabled an in-depth exploration of experiences while systematically identifying key themes in the data. The semi-structured format enabled participants to share their unique insights and reflections, allowing the researcher to explore specific concerns as needed. A standardized interview framework with 21 open-ended questions was employed, allowing for individual viewpoints to be respected. The conversational style and

open-ended questions encouraged detailed, nuanced responses, producing rich qualitative data for further analysis.

Thematic analysis involved systematically coding the data to identify recurring ideas, phrases, and patterns. Using NVivo software, 128 unique codes were identified from the transcripts and grouped into broader themes that captured key concepts and visible patterns. These themes included personal factors, time management, financial barriers, support systems, motivation, and self-determination. They were carefully reviewed and refined to ensure they accurately reflected participants' narratives, including re-examining transcripts to confirm their alignment with the data. The themes were organized within a framework that highlighted their significance and frequency. Participant quotes were used to validate the findings further, thereby enhancing the credibility of the results. This combination of semi-structured interviews and thematic analysis provided depth and richness to the data while maintaining a systematic and comprehensive evaluation. It enabled the study to effectively address the research questions and deepen the understanding of the factors influencing the persistence and success of doctoral students.

Chapter 4 presents the study's key findings, organized around two main and two secondary research questions that explore the factors influencing program completion among doctoral and PhD students. The findings, derived from thematic analysis, align with the theoretical framework and the existing literature. This research examined the factors affecting the persistence and success of doctoral and PhD students and candidates. Using a qualitative descriptive approach guided by self-determination theory, several important themes emerge, including personal challenges (such as self-doubt and anxiety), time management issues,

financial constraints, discipline-specific obstacles, support systems (including family, peers, and mentors), and motivational factors (autonomy, competence, and relatedness).

Data collection involved semi-structured interviews with ten participants from various disciplines and institutions. Trustworthiness was maintained through member checking, triangulation, and reflexivity. The findings showed that challenges vary across academic disciplines and doctoral program stages, underscoring the importance of autonomy in research. Simultaneously, relatedness played a key role during the dissertation writing phase. These results supported the theoretical framework and the existing literature, thereby deepening understanding of the complex interactions among academic, financial, social, and institutional factors that affect student participation. Chapter 4 prepares the reader for further interpretation and analysis of these findings, which will be discussed in Chapter 5.

Chapter 5: Implications, Recommendations, and Conclusions

Research indicated that the doctoral student completion rate was 56% in 2021, as reported by the Council of Graduate Schools (2023). This rate was notably lower than that for undergraduate and master's programs (https://nces.ed.gov/programs/coe/indicator/ctr). Completion rates varied across programs, with Doctor of Education (EdD) programs experiencing attrition rates as high as 70%, compared to 40% to 60% in other doctoral studies (Nettles & Millett, 2006). Several factors influenced these outcomes, including financial difficulties, academic discipline, marital status (especially being married), family responsibilities, and the level of academic and supervisory support (Shin et al., 2021; van Rooij et al., 2021; Borders et al., 2020; Lorensius & Lugan, 2022). The study aimed to identify factors affecting doctoral students' persistence, productivity, and success. Chapter 5 is organized around

research questions, offering a structured analysis of findings with participant quotes and relevant literature.

Discussion

This study addressed the problem of low doctoral student completion rates, which were reported to be just 56.6% in 2021 (Council of Graduate Schools, 2023). The purpose of this qualitative descriptive study was to gain an in-depth understanding of the factors that impact doctoral students' persistence, productivity, and success, as reported by doctoral students. A qualitative descriptive methodology was employed to investigate these experiences and the factors that influenced them. Data was collected through semi-structured interviews. Ten participants were purposefully selected from diverse cultural backgrounds, academic fields, and universities across the United States.

Thematic analysis was performed using Braun and Clarke's six-step method, which included familiarization, coding, theme development, and synthesis. The study identified seven key themes or factors affecting doctoral students' persistence, including: Personal Factors (such as self-doubt, anxiety, and mental health issues), Time Management (balancing academic, family, and personal responsibilities), Financial Barriers (covering tuition costs, limited stipends, and debt), Discipline Constraints (specific challenges like technical issues and resource access), Support Systems (emotional, financial, and academic support from family, peers, and mentors), Motivation (both internal and external factors like career goals and self-fulfillment), and Self-Determination (autonomy, competence, and relatedness are vital for persistence). However, the findings were limited by a small sample of 10 participants, all from the United States, which may limit their broader relevance. Although challenges were observed across various fields, detailed comparisons between disciplines were limited. Data collection was brief, which may have

resulted in the omission of long-term patterns or experiences. Despite these limitations, the study provided valuable insights into the factors influencing doctoral students' persistence and emphasized the need for further research to explore these issues in greater depth.

Chapter 5 synthesizes the study's findings to highlight practical implications for practice and policy, offering recommendations to address obstacles and challenges, and identifying supportive factors that influence the persistence and success of doctoral and PhD students. The discussion explored how these insights could guide strategies at the institutional, community, and policy levels, while stressing the importance of involving doctoral and PhD students in completing their studies. This chapter concludes with a reflection on the study's limitations, a summary of its main contributions, and suggestions for future research to explore further the factors affecting the persistence and success of PhD students.

Implications

Previous studies have extensively examined doctoral students' persistence in completing their studies, identifying various factors that influence their academic journey. Previous studies also highlighted the importance of motivational factors, primarily through the lens of SDT, which identified autonomy, competence, and relatedness as essential for persistence and well-being (Ryan & Deci, 2017; Mason, 2012; Litalien & Guay, 2015). Research by Gardner (2010) highlighted the role of self-direction and autonomy in boosting student engagement, while Marais et al. (2018) and Devos et al. (2017) stressed the importance of perceived progress and ownership of the doctoral project in preventing dropout. This study confirmed that SDT is relevant, showing that autonomy, competence, and relatedness significantly impact doctoral students' persistence. For instance, autonomy was crucial during the middle and final stages of the program, competence was vital for skill mastery, and relatedness provided emotional and

academic support. Financial constraints were identified as a significant barrier to doctoral persistence in studies such as Lovitts (2001) and Sverdlik et al. (2018). Lehan et al. (2021) noted that external factors, such as family commitments and financial issues, directly affect doctoral students' persistence and dropout rates. These studies highlighted the impact of tuition fees, low stipends, and pre-existing debt on students' ability to continue their education. Financial constraints were a consistent theme in this study, with participants highlighting the stress and sacrifices needed to balance academic and personal lives. The research emphasized the importance of financial aid, family support, and administrative resources in overcoming these challenges.

Previous research highlighted the importance of support systems, including supervisors, peers, and family. Devos et al. (2015) focused on the role of structured guidance from supervisors, while De Clercq et al. (2019) highlighted how support from peers, family, and supervisors affects students' emotions, progress, and persistence. This study reinforced the importance of support networks, with participants often citing family, peers, mentors, and institutional support as crucial to their persistence. Positive relationships provide emotional, financial, and academic help. Studies by Gardner (2009) and Castello et al. (2009) identified time management as a key factor in doctoral persistence, especially during the dissertation phase. These studies stressed the importance of self-regulation and effective planning to lower anxiety and increase confidence. In this study, time management was a significant challenge, as participants struggled to balance academic, personal, and professional responsibilities. Scheduling conflicts and institutional pressures added to these difficulties. Golde (2005) and Chiang (2003) noted discipline-specific challenges, such as departmental cultures, teamwork structures, and individual research demands, that influence doctoral students' persistence. This

study also identified discipline-specific challenges, such as technical issues in STEM fields and methodological difficulties in the humanities. Studies like Levecque et al. (2017) and Juniper et al. (2012) emphasized the impact of mental health issues, such as depression and anxiety, on doctoral students' persistence and motivation. The study also highlighted personal challenges like self-doubt, anxiety, and social anxiety that affect doctoral students' persistence. Participants stressed the importance of emotional support and resilience in overcoming these obstacles.

This study offered nuanced insights into how these factors vary across disciplines and doctoral program stages. For example, it highlighted the growing importance of autonomy in the middle and final stages, as well as the consistent significance of relatedness throughout the doctoral journey. The study also emphasized the need for tailored support systems, financial aid, and time management strategies to address the unique challenges doctoral students face. It also underlined the importance of fostering a sense of belonging and providing structured guidance to boost persistence. By combining findings from previous studies with its results, this study contributes to a deeper understanding of the complex interplay of factors that influence doctoral students' persistence, productivity, and success. The findings of this study have several implications for higher education institutions, doctoral programs, and stakeholders. These implications are based on the themes identified in the study and supported by theories and literature. Primarily, personal factors play a significant role in influencing the persistence, productivity, and success of doctoral students. Literature emphasizes strategies to address these personal challenges, supported by relevant theoretical frameworks.

RQ1: What do doctoral students perceive impacted by their persistence at distinct stages of their program?

This study, as revealed by RQ1, identified seven key themes that influenced doctoral students' persistence in their academic journeys. Personal factors, including self-doubt, anxiety, and motivational challenges, presented significant obstacles. Specifically, issues such as social anxiety and fear of failure affected students' readiness to engage in academic pursuits. Time management emerged as another vital concern, as people sought to balance academic responsibilities, family obligations, and personal interests. Additionally, scheduling conflicts and institutional demands complicated effective time management. Financial hurdles, including tuition costs, limited stipends, and pre-existing debt, significantly impacted doctoral students' ability to complete their studies.

Personal Factors. The literature emphasizes the importance of addressing personal factors, such as self-motivation, psychological well-being, self-doubt, anxiety, and resilience, in enhancing the persistence and success of doctoral students. This is supported by theories such as Self-Determination Theory (SDT) (Deci & Ryan, 2008), Bandura's Self-Efficacy Theory (Bandura, 1997), and the positive psychology framework (Seligman, 2011). These strategies aim to mitigate these challenges.

Early Stages (Coursework and Comprehensive Examinations). Personal factors such as self-doubt and impostor syndrome were prominent during the early stages. Participants relied heavily on structured guidance from mentors and faculty to navigate these challenges. Social anxiety and the need for emotional support from peers and family were critical for overcoming initial hurdles. Gardner (2010) noted that self-doubt and impostor syndrome are common among doctoral students in the early stages, which can affect their engagement and persistence. Castello et al. (2017) found that insufficient socialization and feelings of isolation during coursework contribute to dropout intentions. Devos et al. (2015) emphasized the importance of emotional

support from supervisors and peers in mitigating self-doubt and fostering persistence during the initial stages.

Middle Stages (Research Proposal and Data Collection). Autonomy became increasingly important as students made independent decisions regarding their research focus and methodology. Psychological well-being, including stress and anxiety management, was crucial during data collection and analysis. Competence in research methodologies and statistical analyses was emphasized as students faced technical challenges. Litalien and Guay (2015) found that autonomy and competence were crucial for persistence during the middle stages, as students began to take ownership of their research projects. Golde (2005) highlighted that mismatches in values and expectations between students and departments during the research proposal phase can lead to attrition. Chiang (2003) reported that students in the natural sciences, where teamwork and structured research training are common, showed higher persistence than those in the social sciences, which often involve independent work.

Final Stages (Dissertation Writing and Defense). Autonomy was critical for managing time and balancing professional responsibilities with dissertation writing. Competence in dissertation writing and defense instilled a sense of preparedness and confidence. Relatedness played a crucial role in providing emotional and academic support throughout the dissertation process, with mentors and peers bolstering confidence and offering practical guidance. Devos et al. (2015) found that autonomy support from supervisors during the dissertation phase fosters ownership of the project and enhances persistence. Castello et al. (2009) highlighted the importance of effective planning and revision during the writing process to reduce anxiety and boost confidence. Levecque et al. (2017) reported that work-family conflict during the

dissertation phase is a strong predictor of psychological distress, negatively impacting persistence.

For instance, intrinsic motivators like personal growth and career aspirations drive persistence (De Clercq et al., 2021; Hudson et al., 2020). Mental health concerns, such as anxiety and depression, can impede persistence, but strategies like counseling and mindfulness can improve well-being (Levecque et al., 2017; Sverdlik & Hall, 2020). Impostor syndrome and fear of failure are common barriers that can be addressed by fostering self-efficacy and a sense of belonging (Bandura, 1997; Tinto, 2017). Grit and perseverance are essential for overcoming setbacks, and interventions such as growth mindset training can enhance resilience (Hudson et al., 2020; Seligman, 2011). This study recommends supporting responses of RQ 1 through implementing mentorship programs to help build self-efficacy and resilience (Hudson et al., 2020; Rockinson-Szapkiw et al., 2016). Mental health support, including counseling and stress management workshops, is also recommended (Levecque et al., 2017; Sverdlik & Hall, 2020). Peer networks can foster a sense of belonging through support groups (Tinto, 2017; Rockinson-Szapkiw et al., 2016). Positive psychology interventions, such as gratitude exercises and growth mindset training, aid in developing resilience and emotional regulation (Seligman, 2011; Hudson et al., 2020).

Time Management. The findings of this study, responses to RQ1, highlighted time management as a crucial factor influencing doctoral students' persistence and completion, aligning with existing literature and theories.

Early Stages (Coursework and Comprehensive Examinations): Time management challenges arise from balancing coursework, family responsibilities, and personal commitments. Participants reported relying on structured guidance from mentors and faculty during this phase.

Gardner (2009) noted that the lack of structure in doctoral programs requires students to be self-motivated and manage their time effectively. Castello et al. (2009) emphasized that effective planning during coursework reduces anxiety and boosts confidence. Self-Determination Theory (SDT) highlighted autonomy as less prominent in the early stages, with students relying on external guidance to manage their time well.

Middle Stages (Research Proposal and Data Collection): Autonomy becomes more important as students independently navigate research focus and methodology. Time management is essential for balancing data collection and personal responsibilities. Geraniou (2010) explored internal survival strategies, such as self-reliance and achievement, which help students stay motivated and manage their time effectively during research phases. Golde (2005) found that departmental cultures influence students' ability to manage time and persist. SDT emphasized competence during this stage, as students develop technical skills and research methodologies, requiring effective time management to overcome obstacles.

Final Stages (Dissertation Writing and Defense): Time management is crucial for balancing professional responsibilities, dissertation writing, and defense preparation. Participants emphasized the importance of autonomy in making informed choices and managing their schedules. Gardner (2009) noted that the dissertation phase involves greater independence and knowledge creation, requiring strong time management skills. Castello et al. (2009) emphasized the importance of planning and revision during the writing process to alleviate anxiety and enhance confidence. SDT underscored autonomy and competence as key factors in the final stages, enabling students to manage their time effectively and persevere through the demands of dissertation writing and defense.

Time management challenges evolve across the stages of doctoral study, with autonomy and competence playing increasingly significant roles. The findings of this study, aligned with SDT and existing literature, emphasize the importance of structured guidance in the early stages, self-reliance during research, and independence in the final phases.

The Support Systems. The findings of this study and responses to RQ1 highlight the vital role of support systems, including family, peers, mentors, and institutional resources, throughout various stages of completing a doctoral program.

Early Stages (Coursework and Comprehensive Exams). Relatedness is crucial for emotional support and forming connections with peers and mentors. Participants emphasized the significance of family and peer relationships in overcoming early challenges. Gardner (2010) stressed the importance of social connections in engaging doctoral students during coursework. Devos et al. (2015) discovered that supervisor support early on fosters a sense of belonging and reduces feelings of isolation. Rigler et al. (2017) noted that peer relationships facilitate students' adaptation to academic demands and foster resilience. Self-Determination Theory (SDT) identifies relatedness as a core psychological need, particularly in the early stages, when emotional support and connections are crucial for persistence.

Middle Stages (Research Proposal and Data Collection). Support systems provide encouragement and guidance throughout the research proposal development and data collection process. Participants leaned on mentors and peers for academic and emotional support to overcome obstacles. Devos et al. (2015) highlighted the importance of structured mentorship during research phases, as it helps students navigate methodological challenges and stay motivated. Hospel & Galand (2016) found that support from peers and supervisors has a positive effect on students' emotions and perceived progress during research. SDT emphasizes

competence and relatedness in this stage, as students depend on mentors and peers to develop technical skills and maintain emotional resilience.

Final Stages (Dissertation Writing and Defense). Support systems are crucial for providing emotional and academic support during dissertation writing and preparation for the defense. Participants noted that relationships with mentors and peers boosted their confidence and offered practical help. Gardner (2010) emphasized the role of mentors in guiding students through the dissertation phase, providing both academic and emotional support. Castello et al. (2009) noted that peer collaboration during writing reduces anxiety and increases confidence. Walsh et al. (2023) noted that family encouragement eases stress and provides stability during the final stages. SDT emphasizes autonomy and relatedness as key factors in the final stages, where students rely on support systems to strike a balance between independence and their emotional and academic needs.

Support systems develop across the stages of doctoral study, with relatedness playing a central role in fostering emotional and academic resilience. The results align with SDT and existing research, emphasizing the importance of family, peer, and mentor support in the early stages, structured mentorship during the research, and collaborative relationships during dissertation writing and defense.

Financial Barriers. The findings of this study and the participants' responses to RQ1 align with existing literature and theories regarding financial factors and their impact on doctoral students' persistence at various stages of their academic journey. Financial barriers, such as tuition fees, insufficient stipends, and pre-existing debt, emerged as significant challenges across all stages of doctoral study. These findings are consistent with previous research, which has

highlighted the pervasive influence of financial constraints on the progress and completion of doctoral students.

Early Stages (Coursework and Comprehensive Exams). In the early stages, financial barriers often deter students from enrolling or create stress during coursework. Lovitts (2001) and Sverdlik et al. (2018) noted that financial challenges, including tuition costs and limited funding opportunities, are significant obstacles for doctoral students. This study found similar issues, with participants emphasizing the difficulty of managing finances while balancing academic and personal responsibilities. For example, Participant P1 stated, "Managing finances was my greatest challenge while balancing work with my PhD studies." This aligns with Buonaguro (2022), who found that students who felt financially prepared were more likely to pursue doctoral education.

Middle Stages (Research Proposal and Data Collection). During the middle stages, financial constraints often impact students' ability to conduct research, attend conferences, and access necessary resources. Lehan et al. (2021) explained that external factors, such as family commitments and financial constraints, directly influence doctoral students' persistence. This study corroborates these findings, as participants reported experiencing financial strain during data collection and the development of the research proposal. Participant P2 shared, "My family doubled their efforts to support me and my brother as we pursued our degrees simultaneously." This highlights the importance of external support systems in mitigating financial challenges during this stage.

Final Stages (Dissertation Writing and Defense). In the final stages, financial barriers can hinder dissertation writing and defense, as students may struggle to balance work and academic commitments. This study found that participants relied heavily on family and

institutional support to overcome financial obstacles. Participant P10 stated, "I was under financial constraints during my doctoral degree completion process, which was a significant hurdle in my educational journey." These findings align with those of Castello et al. (2009), who emphasized the role of financial stability in reducing anxiety and boosting confidence during the dissertation phase.

The findings also aligned with Self-Determination Theory (Deci & Ryan, 2008), which emphasized the importance of autonomy, competence, and relatedness in fostering persistence. Financial barriers often undermine autonomy by limiting students' ability to make independent decisions about their academic journey. However, relatedness, such as support from family and peers, can mitigate these challenges and enhance persistence. For example, Devos et al. (2015) highlighted the importance of supervisor and peer support in helping students navigate financial constraints. The findings of this study are consistent with the existing literature and theories, demonstrating that financial factors have a significant impact on doctoral students' persistence at various stages of their academic journey. Addressing these barriers through institutional support, financial aid, and external resources is crucial for fostering persistence and success among doctoral students.

Discipline Constraints. The findings of this study, regarding discipline-specific constraints and participants' responses to RQ1, aligned with existing literature and theories and demonstrated how challenges vary across academic fields and stages of doctoral study. Discipline constraints, such as technical difficulties, research methodology challenges, and representation concerns, significantly impact doctoral students' persistence and completion rates.

Early Stages (Coursework and Comprehensive Exams). In the early stages, constraints often manifest as difficulties in mastering foundational knowledge and technical skills,

particularly in STEM fields. This study found that participants in technical disciplines emphasized the importance of competence in understanding complex concepts. For example, Participant P9 (Mechanical Engineering) stated, "Competence in understanding intricate concepts was crucial for keeping pace with coursework and technological advancements." These findings align with Golde's (2005) findings, who noted that departmental cultures and practices significantly influence students' interest and persistence in their chosen discipline. Chiang (2003) also highlighted that students in natural sciences benefit from structured teamwork research training, which fosters satisfaction and persistence, while social sciences students face more challenges due to individual research structures.

Middle Stages (Research Proposal and Data Collection). During the middle stages, discipline constraints often revolve around research methodology and data collection challenges. This study found that participants in fields such as accounting and psychology struggled with methodological issues. Participant P4 (Accounting) noted, "Issues with research methodology, especially in quantitative research and statistical analysis, required significant effort to mitigate sample bias and ensure data quality." Similarly, Participant P2 (Psychology) stated, "Data collection was the most daunting part of my doctoral journey, requiring substantial effort and presenting numerous challenges." These findings are consistent with those of Rosser and Lane (2002), who found that female doctoral students in STEM disciplines experienced greater role conflict and methodological challenges, which negatively affected their persistence.

Final Stages (Dissertation Writing and Defense). In the final stages, discipline constraints often involve high publication demands, dissertation writing, and defense. This study found that participants in evolving, or interdisciplinary fields, faced challenges related to institutional support and recognition. Participant P3 (Business Management) highlighted

representation concerns, stating, "I encountered representation issues, like the scarcity of Black professionals in leadership roles, which affected my motivation and persistence." These findings align with Golde (2005), who emphasized that mismatches in values and expectations between students and departments can hinder persistence. Additionally, Castello et al. (2009) noted that effective planning and revision during the writing process can reduce anxiety and boost confidence, emphasizing the importance of discipline-specific support during the dissertation phase.

Self-Determination Theory (Deci & Ryan, 2008) emphasized the importance of competence, autonomy, and relatedness in fostering persistence. Discipline constraints often challenge competence by requiring students to master complex methodologies and technical skills. However, relatedness, such as support from mentors and peers, can mitigate these challenges and enhance persistence. For example, Devos et al. (2015) highlighted the importance of supervisor support in helping students navigate discipline-specific obstacles.

The findings of this study were consistent with the existing literature and theories, demonstrating that discipline-specific constraints have a significant impact on doctoral students' persistence at various stages of their academic journey. Addressing these challenges through tailored mentorship, institutional support, and structured training programs is crucial for fostering persistence and success among doctoral students.

Motivation. The findings of this study regarding motivational factors and participants' responses to RQ1 align with existing literature and theories, demonstrating how intrinsic and extrinsic motivators influence doctoral students' persistence at different stages of their academic journey. Motivation, as a key driver of persistence, varies across stages and disciplines, with factors such as career aspirations, personal growth, and empowerment playing significant roles.

Early Stages (Coursework and Comprehensive Exams). In the early stages, intrinsic motivation, such as intellectual curiosity and the desire for personal growth, often drives students to enroll and persist in their doctoral programs. This study found that participants emphasized the importance of intrinsic motivators during coursework and comprehensive exams. For example, Participant P10 (History) stated, "I was inspired by my career goals and the ambition to be the first in my family to obtain a doctorate degree." These findings align with Brailsford (2010), who identified intrinsic motivators, such as valuing intellectual skills and personal development, as key reasons for pursuing doctoral studies. Additionally, Ryan and Deci (2017) emphasized that intrinsic motivation, driven by autonomy and competence, fosters engagement and persistence in academic settings.

Middle Stages (Research Proposal and Data Collection). During the middle stages, extrinsic motivators, such as career advancement and external recognition, became more prominent as students navigate research proposals and data collection. This study found that participants relied on both intrinsic and extrinsic motivators to overcome challenges during this phase. Participant P7 (Computer Science) stated, "I aspired to advance my academic career and contribute to computer science, focusing on perseverance in the face of financial and academic hurdles." Similarly, Participant P3 (Business Management) noted, "I sought to empower minority-owned businesses and dismantle barriers in my community, which drove my persistence despite self-doubt and financial strain." These findings align with Litalien and Guay (2015), who found that extrinsic motivators, such as financial support and career opportunities, help reduce dropout intentions. Additionally, Deci and Ryan (2008) highlighted the role of self-determination in fostering resilience and persistence during challenging phases of doctoral study.

Final Stages (Dissertation Writing and Defense). In the final stages, intrinsic motivators, such as the desire to complete the dissertation and achieve personal goals, often take precedence. This study found that participants emphasized the importance of intrinsic motivation during dissertation writing and defense. Participant P5 (Accounting) stated, "I aimed to enhance my understanding of accounting theories and prepare for a tutoring career, emphasizing consistency and balancing education with family responsibilities." These findings align with those of Castello et al. (2009), who noted that intrinsic motivation, driven by self-efficacy and a sense of purpose, is crucial for overcoming anxiety and maintaining persistence during the dissertation phase. Additionally, Mason (2012) demonstrated that autonomous motivation positively impacts persistence and satisfaction, particularly during the final stages of doctoral studies.

The findings aligned with Self-Determination Theory (Deci & Ryan, 2008), which emphasized the importance of autonomy, competence, and relatedness in fostering motivation and persistence. Intrinsic motivators, such as autonomy and competence, are closely linked to self-determination and resilience. For example, Ryan and Deci (2017) highlighted that fulfilling basic psychological needs enhances intrinsic motivation and promotes persistence. Extrinsic motivators, such as financial support and career opportunities, also play a role in sustaining motivation, particularly during the middle stages of doctoral study.

The findings of this study are consistent with existing literature and theories, demonstrating that motivational factors significantly impact doctoral students' persistence at different stages of their academic journey. Addressing these factors through tailored mentorship, institutional support, and structured training programs is crucial for fostering persistence and success among doctoral students.

RQ1a: How do the perceptions of factors influencing persistence differ across disciplines?

Participants in the study responded to Research Question 1a, which explored how perceptions of factors influencing persistence differed across disciplines. Their responses highlighted several themes:

Financial Barriers. Participants across disciplines reported financial challenges, including tuition fees, insufficient stipends, and balancing work with studies. For example, Participant P1 (Art) stated, "Managing finances was my greatest challenge while balancing work with my PhD studies." Participant P6 (Accounting) added, "Financial issues became a major barrier, particularly after losing my mother." Life circumstances compounded these financial constraints, as Participant P2 (Psychology) noted, "My family doubled their efforts to support me and my brother as we pursued our degrees simultaneously."

Time Management. Participants emphasized the difficulty of balancing academic, personal, and professional responsibilities. Participant P5 (Accounting) stated, "Managing my education, family, and life created significant barriers that impacted my persistence, but my internal motivation and family support helped me reach my goals." Scheduling conflicts were also noted, as Participant P8 (Human Resources) explained, "If I had a robotics competition scheduled for a family gathering weekend, I would have to miss the gathering."

Discipline Constraints. Discipline-specific challenges varied across fields. STEM students faced technical issues, while humanities students encountered methodological difficulties. Participant P9 (Mechanical Engineering) stated, "I faced technical problems in chapters 2 and 3 of my dissertation. Resilience and support from my professors helped me navigate these challenges." Participant P3 (Business Management) highlighted representation

concerns, stating, "I encountered representation issues, like the scarcity of Black professionals in leadership roles, which affected my motivation and persistence."

Motivation. Participants described intrinsic and extrinsic motivators, such as career growth, personal development, and empowerment. Participant P7 (Computer Science) stated, "I aspired to advance my academic career and contribute to computer science, focusing on perseverance in the face of financial and academic hurdles." Participant P3 (Business Management) added, "I sought to empower minority-owned businesses and dismantle barriers in my community, which drove my persistence despite self-doubt and financial strain."

Support Systems. Participants emphasized the importance of emotional, financial, and academic support. Participant P9 (Mechanical Engineering) stated, "Support from peers, family, and university staff was crucial for my academic perseverance." Participant P10 (History) added, "The assistance from my peers and family greatly supported me both emotionally and financially, enhancing my sense of belonging."

Self-Determination Theory (SDT): SDT (Deci & Ryan, 2008) provides a framework for understanding persistence through three psychological needs: autonomy, competence, and relatedness. Autonomy was significant during research phases, competence was vital for mastering skills, and relatedness provided emotional and academic support. These findings align with the participants' emphasis on independence, technical mastery, and supportive relationships. Previous studies, such as Lovitts (2001) and Sverdlik et al. (2018), identified financial constraints as a significant obstacle to doctoral persistence. Lehan et al. (2021) noted that external factors, such as family commitments and financial challenges, directly influence students' intentions to persist or drop out. Gardner (2009) emphasized the importance of self-regulation and effective time management, particularly during the dissertation phase. Castello et

al. (2009) highlighted that planning and revision during the writing process can reduce anxiety and boost confidence. Golde (2005) found that departmental cultures and practices significantly influence doctoral student attrition. Chiang (2003) found that students in natural sciences who received structured teamwork research training reported higher satisfaction and persistence than those in the social sciences. Ryan & Deci (2017) emphasized intrinsic and extrinsic motivators, such as career aspirations and personal growth, critical for persistence. Brailsford (2010) categorized the reasons for pursuing doctoral studies into intrinsic (e.g., intellectual curiosity) and extrinsic (e.g., career opportunities) motivational factors. Devos et al. (2015) highlighted the importance of supervisor support in guiding students through their doctoral journey. De Clercq et al. (2019) demonstrated that peers, family, and supervisor support significantly impact doctoral students' emotions, perceived progress, and persistence. The participants' responses to RQ1a align with previous studies and SDT. Financial barriers, time management, discipline-specific challenges, motivation, and support systems were consistently identified as critical factors influencing persistence. SDT's emphasis on autonomy, competence, and relatedness provides a theoretical lens to understand how these factors interact across disciplines and stages of doctoral programs.

RQ2: How do doctoral students perceive autonomy, competence, and relatedness influence their persistence at distinct stages of their program?

The investigation into RQ2, guided by self-determination theory (Deci & Ryan, 2008), revealed that autonomy, competence, and relatedness significantly influenced doctoral students' persistence across various stages of their academic programs. Discipline-specific challenges, such as technical hurdles in engineering or a lack of resources in the humanities, created unique difficulties for students in their respective fields. These challenges influenced persistence

differently across various disciplines. Financial barriers were closely linked to the three components of SDT, affecting persistence at various stages. P10 noted, "Autonomy was crucial for managing time and balancing professional responsibilities with dissertation writing," highlighting how financial independence fosters autonomy. P2 stated, "I suffered financial hardships throughout my academic experience, resulting in stress, low motivation, frustration, and fear of losing my persistence." P9 emphasized the importance of family and peer support in overcoming financial barriers, saying, "Support from peers, family, and university staff was crucial for my academic perseverance."

Autonomy was perceived as critical for making independent decisions and managing academic responsibilities, particularly during the research and dissertation phases. Participants emphasized the importance of controlling their academic journeys, including research focus, methodology, and time management. The result showed that autonomy in the early stages of doctoral study was less emphasized but important for managing coursework and comprehensive exams. In the middle stages, autonomy became vital during research proposal development and data collection, as students had to make independent decisions about their research focus and methodology. At the final stages of doctoral studies, autonomy of doctoral/PhD studies was crucial for managing time and making informed decisions about dissertation writing and defense.

Competence was crucial for fostering confidence and tackling academic challenges, including research methodologies, data analysis, and technical concepts. Participants noted that a sense of competence enabled them to push through tough times in their programs. During the initial stages of doctoral education, competence was crucial for grasping foundational knowledge and developing technical skills, especially in STEM disciplines. In the middle stages, it was key

to successfully navigate research methodologies and statistical analyses, as observed in psychology and accounting. In the final stages of doctoral studies, competence significantly influenced dissertation writing and defense, instilling a sense of preparedness and confidence in students.

Relatedness, which referred to the feeling of belonging and connection with peers, family, and mentors, was consistently highlighted as a key factor in sustaining persistence. Participants emphasized the importance of emotional and academic support from their social networks in overcoming challenges such as isolation, self-doubt, and burnout. In the initial stages of doctoral studies, relatedness was vital for emotional support during coursework and comprehensive exams, fostering a sense of connection and reducing feelings of isolation. In the intermediate stages, relatedness provided encouragement and guidance as researchers developed research proposals and collected data. By the final stages, relatedness became essential for emotional and academic support throughout the dissertation writing process, the defense, and reliance on mentors and peers.

RQ2a: How does the influence of autonomy, competence, and relatedness differ between students at various stages in different academic disciplines?

Research Question 2a explored how the influence of autonomy, competence, and relatedness differs across stages and academic disciplines. Participants highlighted the following insights, such as that autonomy was perceived differently across disciplines and stages of doctoral programs.

Autonomy. In the early stages, autonomy was less emphasized, as students relied on structured guidance from mentors. Participant P3 (Business Management): "During coursework, I depended on mentors to help me overcome self-doubt and impostor syndrome." In the middle

stages, autonomy gained importance as students made independent decisions regarding research focus and methodology. Participant P2 (Psychology): "I felt a sense of control during data collection, which helped me navigate challenges and make informed decisions." In the final stages, autonomy was found to be critical for managing time and balancing professional responsibilities with dissertation writing. Participant P10 (History): "Autonomy was crucial for managing time and balancing professional responsibilities with dissertation writing." Devos et al. (2015) noted that autonomy support from supervisors fosters ownership of doctoral projects, enhancing persistence. Mason (2012) demonstrated that autonomous motivation positively impacts persistence and satisfaction.

Competence. Competence varied across disciplines and stages, with STEM students emphasizing technical mastery and humanities students focusing on research methodologies. In the early stages, competence was essential for mastering foundational knowledge and technical skills. Participant P9 (Mechanical Engineering): "Competence in understanding intricate concepts was vital for keeping pace with coursework and technological advancements." In the middle stages, competence became critical for understanding research methodologies and statistical analyses. Participant P4 (Computer Science): "Competence in research methodology and statistical analysis helped me overcome obstacles and ensure data quality." In the final stages, competence played a crucial role in dissertation writing and defense. Participant P7 (Computer Science): "Competence in staying updated on technological advances was essential for my perseverance in the program." Litalien and Guay (2015) found that feelings of competence are important predictors of completing a doctoral program. Bandura (1997) emphasized self-efficacy, closely related to competence, as a motivator for achievement and persistence.

Relatedness. Relatedness was consistently emphasized across disciplines, but its significance varied by stage. In the early stages, relatedness was essential for emotional support and building connections. Participant P6 (Human Resources): "Peer relationships and family support helped me navigate the early challenges of coursework." In the middle stages, relatedness provided encouragement and guidance throughout the research proposal development and data collection phases. Participant P8 (Human Resources): "Encouragement from peers and family helped me stay persistent through data collection challenges." In the final stages, relatedness was crucial for emotional and academic support during dissertation writing and defense. Participant P3 (Business Management): "Relationships with mentors and peers aided me in practicing my defense and boosted my confidence in presenting my research." Gardner (2010) highlighted the significance of social connections in engaging doctoral students. Litalien and Guay (2015) concluded that relatedness positively influences persistence by fostering a sense of belonging.

Self-Determination Theory (SDT). SDT (Deci & Ryan, 2008) provided a framework for understanding how autonomy, competence, and relatedness influence persistence across stages and disciplines. Previous studies have explored how autonomy, competence, and relatedness vary across the stages of doctoral programs. In the early stages, competence is critical for mastering foundational knowledge and technical skills, particularly in STEM fields (Chiang, 2003). Relatedness provides emotional support and helps build connections with peers and mentors (Gardner, 2010). In the middle stages, autonomy becomes more pronounced as students make independent decisions regarding research focus and methodology (Devos et al., 2015). Competence is essential for navigating research methodologies and statistical analyses (Litalien & Guay, 2015). In the final stages, autonomy is vital for managing time and dissertation writing

(Mason, 2012). Relatedness offers emotional and academic support during the dissertation defense (Gardner, 2010).

Discipline-Specific Challenges. Golde (2005) found that departmental cultures and practices significantly influence doctoral student persistence. Chiang (2003) revealed that students in natural sciences, with structured teamwork research training, reported higher satisfaction and persistence compared to those in social sciences. Rosser and Lane (2002) noted that female doctoral students in STEM disciplines experienced greater role conflict, lower motivation, and reduced quality of life, which negatively affected their persistence.

Suggestions based on the Findings. The following sections provide recommendations on how universities can implement the findings from these research questions. It is followed by quotes and findings specific to each research question. This addresses how the findings answered each research question.

Discipline-Specific Interventions. Universities should tailor interventions to address discipline-specific challenges. For example, STEM students may benefit from technical workshops and access to advanced research tools. Humanities students may require additional guidance on research methodologies and writing strategies. Business students may need mentorship programs to address representation concerns and career development.

Enhancing Autonomy. Supervisors should encourage independent decision-making and provide opportunities for students to take ownership of their research projects. Structured timelines and milestones can help students manage their autonomy effectively.

Building Competence. Universities should offer workshops and training programs to help students develop technical skills, research methodologies, and dissertation writing techniques. Competence-building initiatives can enhance students' confidence and persistence.

Strengthening Relatedness. Institutions should create opportunities for peer collaboration, mentorship, and community-building activities. Support services, such as counseling and writing centers, can enhance students' sense of belonging and persistence.

Addressing Financial Barriers. Institutions should provide more financial aid, scholarships, and stipends to reduce the financial burden on doctoral students. Programs could also offer workshops on financial planning and budgeting to help students manage their resources effectively.

Enhancing Time Management Skills. Universities should offer time management workshops and tools to help students balance academic, personal, and professional responsibilities. Structured timelines for dissertation milestones could also improve students' ability to manage their workload.

Providing Discipline-Specific Support. Tailored support should be provided based on the unique challenges of each discipline. For example, STEM students may benefit from technical workshops, while humanities students may need additional guidance on research methodologies.

Fostering Motivation. Programs should emphasize intrinsic motivators, such as personal growth and career aspirations, while also providing extrinsic incentives like recognition and career opportunities. Mentorship programs can help students stay motivated and focused.

Building Support Systems. Universities should create opportunities for peer collaboration, mentorship, and community-building activities. Support services, such as counseling and writing centers, can also enhance students' sense of belonging and persistence.

RQ 1: Discipline-specific challenges were identified as a recurring theme, with participants emphasizing obstacles unique to their fields. P2 (Psychology) stated, "I found

chapter 4 difficult because it focused on data collection, which was the most daunting part of my psychology doctoral journey." Golde (2005) pointed out that mismatches in values and expectations between students and departments are key obstacles to persistence.

RQ 1a: P9 (Mechanical Engineering) highlighted technical challenges, while P4 (Computer Science) emphasized research methodology obstacles. Chiang (2003) found that students in natural sciences reported higher satisfaction and persistence due to structured teamwork environments.

RQ 2: P10 (History) noted, "Autonomy was crucial for managing time and balancing professional responsibilities with dissertation writing." P7 (Computer Science) stated, "Competence in staying abreast of technological developments was critical for my persistence in the program." P3 (Business Management) emphasized the importance of representation and mentorship in fostering a sense of belonging. Institutions should recognize and address discipline-specific challenges, such as technical issues in STEM fields or methodological difficulties in the humanities. Golde (2005) and Chiang (2003) found that departmental cultures and discipline-specific practices significantly influence persistence. This study also identified unique challenges across disciplines.

Support System

The implementation of support systems is strongly supported by literature, theory, this study's findings, and research questions. Support systems emerged as a key theme affecting doctoral students' persistence, productivity, and success. Support systems, including family, peers, mentors, and institutional resources, were consistently highlighted as vital for overcoming challenges and building resilience.

Devos et al. (2015) emphasized the importance of supervisors providing clear goals and expectations, which are essential for guiding students through their doctoral journey. Gardner (2010) highlighted the significance of peer relationships in fostering a sense of belonging and reducing feelings of isolation among doctoral students. Walsh et al. (2023) noted that family encouragement can alleviate stress and provide stability, while a lack of support can hinder progress. Cockrell (2008) found that access to funding, mental health services, writing centers, and career counseling enhances students' ability to face challenges and persist in their programs.

Support systems are closely connected to Self-Determination Theory (SDT), which highlights the importance of satisfying basic psychological needs like autonomy, competence, and relatedness for motivation and persistence. Support systems, such as mentors and advisors, assist students in navigating challenges independently, fostering autonomy (Deci & Ryan, 2008; Ryan & Deci, 2020). Positive relationships with peers and mentors offer guidance and encouragement, boosting students' confidence in their abilities and promoting competence (Bandura, 1997; Litalien & Guay, 2015). Support systems also foster a sense of belonging and connection, which is essential for sustaining motivation and persistence (Gardner, 2010; Tinto, 2017).

The findings of this study identified support systems as a recurring theme, with participants emphasizing the importance of family, peers, mentors, and institutional resources in their academic journeys. Participants frequently highlighted the role of family in providing emotional and financial support. P2 stated, "My family doubled their efforts to support me and my brother while we were both pursuing our doctoral degrees concurrently." Walsh et al. (2023) emphasized the importance of family encouragement in alleviating stress and fostering persistence. Participants noted that peer relationships fostered a sense of belonging and provided

emotional and intellectual support. P6 shared, "Peer relationships and family support helped me navigate the early challenges of coursework." Gardner (2010) highlighted the significance of peer relationships in reducing feelings of isolation. Participants emphasized that mentorship is vital in providing guidance, motivation, and academic assistance. P3 stated, "I sought help from mentors, family, and spiritual leaders to tackle self-doubt, financial struggles, and feelings of isolation." Devos et al. (2015) noted that supervisor support is the most crucial form of guidance for doctoral students. P9 stated, "Support from peers, family, and university staff was crucial for my academic perseverance." Cockrell (2008) found that access to institutional resources enhances students' ability to face challenges. This study identified support systems as a recurring theme, with participants emphasizing the importance of family, peers, mentors, and institutional resources in their academic journeys. Participants frequently highlighted the role of family in providing emotional and financial support. P2 stated, "My family doubled their efforts to support me and my brother while we were both pursuing our doctoral degrees concurrently." Walsh et al. (2023) emphasized the importance of family encouragement in alleviating stress and fostering persistence. Participants noted that peer relationships fostered a sense of belonging and provided emotional and intellectual support. P6 shared, "Peer relationships and family support helped me navigate the early challenges of coursework." Gardner (2010) highlighted the significance of peer relationships in reducing feelings of isolation. Participants emphasized that mentorship is vital in providing guidance, motivation, and academic assistance. P3 stated, "I sought help from mentors, family, and spiritual leaders to tackle self-doubt, financial struggles, and feelings of isolation." Devos et al. (2015) noted that supervisor support is the most crucial form of guidance for doctoral students. P9 stated, "Support from peers, family, and university staff was crucial for my academic perseverance." Cockrell (2008) found that access to institutional resources

enhances students' ability to face challenges and persist. This study identified support systems as a recurring theme, with participants emphasizing the importance of family, peers, mentors, and institutional resources in their academic journeys. Participants frequently highlighted the role of family in providing emotional and financial support. P2 stated, "My family doubled their efforts to support me and my brother while we were both pursuing our doctoral degrees concurrently." Walsh et al. (2023) emphasized the importance of family encouragement in alleviating stress and fostering persistence. Participants noted that peer relationships fostered a sense of belonging and provided emotional and intellectual support. P6 shared, "Peer relationships and family support helped me navigate the early challenges of coursework." Gardner (2010) highlighted the significance of peer relationships in reducing feelings of isolation. Participants emphasized that mentorship is vital in providing guidance, motivation, and academic assistance. P3 stated, "I sought help from mentors, family, and spiritual leaders to tackle self-doubt, financial struggles, and feelings of isolation." Devos et al. (2015) noted that supervisor support is the most crucial form of guidance for doctoral students. P9 stated, "Support from peers, family, and university staff was crucial for my academic perseverance." Cockrell (2008) found that access to institutional resources enhances students' ability to face challenges and persist.

RQ 1: Support systems emerged as a recurring theme, with participants highlighting the significance of family, peers, mentors, and institutional resources. P10 stated, "The assistance from my peers and family greatly supported me both emotionally and financially, enhancing my sense of belonging." Gardner (2010) and Walsh et al. (2023) emphasized the importance of peer and family support in fostering persistence.

RQ 1a: The impact of support systems differed across disciplines, with STEM students emphasizing mentorship and humanities students focusing on peer relationships. P9 (Mechanical

Engineering) emphasized mentorship, while P6 (Human Resources) highlighted peer relationships. Devos et al. (2015) and Gardner (2010) noted the importance of both mentorship and peer relationships in fostering persistence.

RQ 2: Support systems were closely connected to the three components of SDT, affecting persistence at various stages. P3 noted, "During coursework, I depended on mentors to help me overcome self-doubt and impostor syndrome." P4 stated, "Competence in research methodology and statistical analysis helped me overcome obstacles and ensure data quality." P8 emphasized, "Encouragement from peers and family helped me persist through challenges during data collection."

Motivational Factors

The implementation of motivational factors is strongly supported by literature, theory, this study's findings, and research questions. Motivation has emerged as a key factor influencing the persistence, productivity, and success of doctoral students. Motivational factors, both intrinsic and extrinsic, were consistently emphasized as crucial to students' completion of their doctoral programs.

Motivational factors are widely recognized in literature as key determinants of doctoral students' persistence and completion rates. Studies such as those by Brailsford (2010) and Gardner (2010) identified intrinsic motivators, such as intellectual curiosity, personal growth, and mastery of the subject, as critical drivers of persistence. Rooij et al. (2021) emphasized the role of extrinsic motivators, such as career advancement, financial incentives, and social recognition, in encouraging persistence among doctoral students. Bandura (1997) highlighted self-efficacy as a crucial motivational factor, noting that students who believe in their ability to

succeed are more likely to persist in their programs. Devos et al. (2015) found that autonomy and ownership of the doctoral project significantly boost motivation and persistence.

Motivational factors are closely linked to Self-Determination Theory (SDT), which emphasizes the importance of satisfying basic psychological needs such as autonomy, competence, and relatedness, motivation, and perseverance. SDT suggests that autonomy, or the ability to make independent choices, is a significant driver of intrinsic motivation (Deci & Ryan, 2008; Ryan & Deci, 2020). Competence, or confidence in one's abilities, boosts intrinsic motivation by helping students overcome challenges and reach their goals (Bandura, 1997; Litalien & Guay, 2015). Relatedness, or the feeling of belonging and connection with others, enhances motivation by offering emotional and social support (Gardner, 2010; Tinto, 2017).

This study identified motivational factors as a recurring theme, with participants emphasizing the importance of both intrinsic and extrinsic motivators in their academic journeys. Participants frequently highlighted intrinsic motivators, including personal growth, intellectual curiosity, and a desire to address real-world problems. P4 stated, "I emphasized the importance of prioritizing my personal growth and addressing real-world problems." Brailsford (2010) identified personal growth and intellectual curiosity as key intrinsic motivators for doctoral students.

Participants noted the role of extrinsic motivators, such as career advancement and social recognition, in driving their persistence. P10 stated, "I was inspired by my career goals and the ambition to be the first in my family to obtain a doctorate." Rooij et al. (2021) emphasized the importance of career advancement and social recognition as extrinsic motivators. Participants emphasized the importance of self-efficacy in fostering motivation and persistence. P9 stated,

"My motivation helps me to stay focused, fostering a strong sense of persistence." Bandura (1997) highlighted self-efficacy as a key motivational factor for persistence. Participants noted that autonomy and ownership of their doctoral projects enhanced their motivation and persistence. P3 stated, "I sought to empower minority-owned businesses and dismantle barriers in my community, which drove my persistence despite self-doubt and financial strain." Devos et al. (2015) found that autonomy and ownership of the doctoral project significantly enhance motivation and persistence. The research questions in this study examined how motivational factors influence the persistence of doctoral students across disciplines and program stages.

RQ 1: Motivational factors emerged as a recurring theme, with participants highlighting the significance of both intrinsic and extrinsic motivators. P7 stated, "I aspired to advance my academic career and contribute to computer science, focusing on perseverance in the face of financial and academic hurdles." Brailsford (2010) and Rooij et al. (2021) emphasized the importance of both intrinsic and extrinsic motivators in promoting persistence.

RQ 1a: The influence of motivational factors differed across disciplines, with STEM students emphasizing career advancement, while humanities students focused on personal growth. P5 (Accounting) shared, "I aimed to deepen my understanding of accounting theories and prepare for a tutoring career, emphasizing consistency and balancing education with family responsibilities." Gardner (2010) noted that intrinsic motivators, such as mastery of the subject, are significant in the humanities.

RQ 2: Motivational factors were closely connected to the three components of SDT, affecting persistence at different stages. P10 mentioned, "Autonomy was crucial for managing time and balancing professional responsibilities with dissertation writing." P7 noted,

"Competence in staying current with technological developments was critical for my persistence in the program." P3 emphasized, "Relationships with mentors and peers helped me practice my defense and boosted my confidence in presenting my research."

RQ 2a: The findings of RQ2a had several implications for improving doctoral students' persistence and success across disciplines, such as the development of customized support systems and discipline-specific interventions. The fields of science, technology, engineering, and mathematics provide technical training and mentorship to address challenges in research methodology and data analysis. Other fields, such as the humanities and social sciences, offer workshops on qualitative and quantitative research methods to improve data collection and analysis skills. However, the business management discipline develops initiatives to increase representation and mentorship opportunities for underrepresented groups.

Suggestions for Interventions. The results from RQ2 revealed important insights for enhancing doctoral students' persistence and success by promoting autonomy and independent decision-making. This can be achieved through workshops and resources designed to help students develop research proposals, select methodologies, and manage their time effectively (Deci & Ryan, 2008). Additionally, it is essential to encourage doctoral students to take ownership of their academic paths by providing flexible program structures and personalized support. In the initial phases, interventions should support coursework and comprehensive exam management while also fostering a sense of control and autonomy. During the middle stages, mentorship and resources should be made available to bolster independent research choices. In the final stages, tools for time management and dissertation planning should be provided to further enhance students' autonomy and independence.

In developing competence- and skill-building programs, educational institutions should provide training in research methodology, statistical analysis, and technical skills tailored to a specific discipline, as recommended by Chamadia and Qureshi (2021). This training should provide doctoral/PhD students with access to resources like writing centers, research workshops, and technology training, all of which help build confidence and competence. Interventions support doctoral and PhD students in developing foundational knowledge and technical skills at various stages, particularly in STEM fields, thereby facilitating the mastery of research methodologies and data analysis. For example, hosting dissertation writing workshops and mock defense sessions can prepare students for the final phase of their research.

Enhancing relatedness fosters peer and mentor connections, facilitating the creation of support networks and mentorship programs. These initiatives can reduce student isolation and foster a sense of belonging (Rigler et al., 2017). They also encourage collaboration and community-building activities, including workshops, webinars, and social events. Such efforts help doctors and PhD students establish connections through orientation programs and peer groups. Institutions should provide opportunities for collaboration during research proposal development and data collection and offer emotional and academic support during dissertation writing and defense, such as peer review groups and mentor feedback.

Institutional reforms and holistic support systems develop programs that incorporate autonomy, competence, and relatedness into the doctoral experience, addressing students' psychological and academic needs (Hamilton, 2023). This intervention provides financial aid, mental health services, and career counseling to help students throughout their programs.

Interpreting the Findings

The findings presented in this study were consistent with and built upon existing research concerning doctoral students' persistence, productivity, and success. Previous research indicated a 56% doctoral completion rate in 2021 (Council of Graduate Schools, 2023). This rate was notably lower than that for undergraduate and master's programs (https://nces.ed.gov/programs/coe/indicator/ctr). With EdD programs experiencing attrition rates as high as 70%, compared to 40–60% for other doctoral programs (Nettles & Millett, 2006), similar disparities in completion rates have been reported across various disciplines, highlighting increased attrition in education-related fields (Ortega et al., 2024). This supported the findings and underscored the need for discipline-specific interventions.

Factors Influencing Persistence

Financial limitations emerged as a common theme, with participants citing tuition costs, inadequate stipends, and the challenge of balancing work and studies as significant barriers (Francis et al., 2025). Levecque et al. (2017) identified financial stress as a significant obstacle for doctoral students, especially those from underrepresented groups. This supported the findings that financial challenges disproportionately affected persistence.

Participants reported difficulties in prioritizing academic, personal, and professional commitments. Walsh et al. (2023) noted that time management challenges are prevalent among doctoral students, particularly those with family responsibilities. This finding aligned with the results and underscored the need for flexible scheduling and institutional support.

Emotional, financial, and academic support from family, friends, mentors, and institutions was essential for persistence. The existing literature emphasizes the importance of academic and supervisory support in fostering resilience and reducing feelings of isolation (Shin

et al., 2021; van Rooij et al., 2021). Saggers et al. (2023) emphasized the importance of peer relationships in fostering a sense of belonging, a finding that aligns with their research.

Psychological Well-Being

Poor psychological health, including issues like self-doubt, anxiety, and social isolation, emerged as significant barriers to persistence. Levecque et al. (2017) found that doctoral students face higher psychological distress than the general workforce. Wollast et al. (2023) also observed that psychological distress affects decision-making and academic engagement, supporting these findings.

Motivation

Motivation and self-determination, which include autonomy, competence, and relatedness, were crucial for persistence. Participants emphasized intrinsic motivators such as career goals, personal growth, and the drive to solve real-world problems. Deci and Ryan (2008) introduced self-determination theory, highlighting the importance of these three elements in fostering intrinsic motivation. Chamadia and Qureshi (2021) also argued that intrinsic motivation increases resilience among doctoral students. These theoretical insights closely match the findings.

Discipline-Specific Challenges

The challenges faced varied by discipline, with technical issues highlighted in Mechanical Engineering and representation concerns emphasized in Business Management. The National Science Board (NSB, 2020) recommended increased research funding for STEM disciplines, while the humanities and social sciences continue to face financial difficulties. Borders et al. (2020) discussed concerns about representation in leadership roles, findings that aligned with theirs.

Stage-Specific Persistence Factors

Factors influencing doctoral students' persistence varied across different stages of their programs. In the early stages, relatedness was key for emotional support. During the middle stages, autonomy was vital for developing research proposals. In the final stages, competence and relatedness were crucial for dissertation writing and defense. Braun and Clarke (2006) highlighted the need for stage-specific interventions. Deci and Ryan (2008) indicated that autonomy became more important during independent research phases, while relatedness remained essential during collaborative stages, such as the dissertation defense.

Implications for Institutional Support

Participants emphasized the need for financial assistance, mentorship programs, and resources to promote self-determination. Cockrell (2008) and Rigler et al. (2017) emphasized the significance of institutional support, including funding, mental health services, and career counseling, in enhancing doctoral completion rates.

Diversity and Inclusion

Participants from underrepresented groups faced unique challenges, including financial barriers and limited representation within the field. Borders et al. (2020) and Walsh et al. (2023) observed that systemic disparities in funding and mentorship disproportionately impact women and minorities in doctoral programs. This supports the findings and emphasizes the need for targeted interventions.

The findings of this dissertation align with existing literature, highlighting well-known barriers such as financial constraints, psychological hurdles, and time management challenges. Additionally, they offer new insights by presenting discipline-specific and stage-specific perspectives, highlighting the crucial role of self-determination theory in understanding

persistence. By combining these findings with prior research, this study offers a comprehensive understanding of the factors influencing doctoral students' success, along with practical recommendations to enhance completion rates and promote student well-being.

Application to Practice

This study identified the diverse and complex needs of doctoral students across different fields. Universities should focus on developing specialized support systems tailored to discipline-specific challenges. For STEM fields, this may include offering technical training and establishing strong mentorship networks to enhance skills and confidence. In the humanities and social sciences, students benefit from workshops that deepen their understanding of research methods and qualitative analysis, enabling them to conduct meaningful, rigorous research. In business management programs, increasing representation, particularly from underrepresented groups, can help create more equitable academic and professional environments. By understanding the unique needs of each discipline, institutions can build a more flexible, inclusive, and practical support system that meets students' needs.

This study focused on creating resources tailored to fulfill the basic psychological needs of doctoral students at each stage of their programs. For example, early stages highlighted foundational knowledge, technical skills, and peer support networks. In the middle stages, the support system provided resources for independent research decisions and workshops on research methods. In the final stages, universities offered emotional and academic support during dissertation writing and supplied time management tools and strategies to help students manage their workload effectively.

Enhancing Autonomy

This study encouraged students to take ownership of their academic journeys by providing flexible program formats and personalized support. Academic institutions should offer workshops and resources to help students develop research proposals, select appropriate methodologies, and manage their time effectively.

Building Competence

Academic institutions should offer training programs in research methodology, statistical analysis, and technical skills that are tailored to specific disciplines. Also, ensure access to writing centers, research workshops, and technology training to boost confidence and competence. Strengthening Relatedness.

Building Relatedness

Academic institutions' support systems foster peer and mentor connections through support networks, mentorship programs, and community events, such as workshops and webinars. Additionally, they help reduce isolation by creating inclusive environments and offering mental health services.

Institutional Reform

Academic institutions should develop comprehensive support systems that promote autonomy, competence, and relatedness throughout the doctoral journey. This approach enhances funding opportunities and ensures equitable access to research grants and assistantships, particularly for underfunded fields such as the humanities and social sciences.

Application to Theory

This study used findings from the integration of Self-Determination Theory to validate and expand its application in understanding doctoral students' persistence (Deci & Ryan, 2008). It highlighted how autonomy allowed students to make independent choices throughout the

research and dissertation phases. Emphasize the importance of competence in boosting confidence and overcoming academic challenges. Explore relatedness as a vital component for fostering both emotional and academic support.

Stage-Specific Framework

Future research can build upon this framework to make it stage-specific. Develop a theoretical framework that illustrates how autonomy, competence, and relatedness impact various stages of doctoral programs. This framework can guide future research and initiatives that target students' evolving needs.

Cultural and Discipline-Specific Insights

This theory can be expanded to incorporate cultural differences. It can broaden theoretical frameworks to incorporate variations in persistence factors across different disciplines and cultural settings. This method can strengthen theories and better address the diverse experiences of doctoral students.

Recommendation for Future Research

Future researchers can build on this study by addressing its limitations, exploring new areas, and broadening the scope of their research. Below are specific recommendations for future work, along with justifications. These are possibilities for future research.

Expand Sample Size and Diversity

Conduct research with larger and more diverse sample sizes, including participants from various countries, diverse cultural backgrounds, and different academic institutions. The current study includes only 10 participants from the USA, which may limit the generalizability of the

results. Expanding the sample size and diversity will provide more comprehensive insights into how autonomy, competence, and relatedness impact doctoral students worldwide.

Longitudinal Studies

Future research could conduct longitudinal studies to track doctoral students' experiences from enrollment through program completion. The current study collected data only in the short term, potentially overlooking key long-term patterns. Longitudinal studies effectively reveal how persistence factors change over time and provide deeper insights into how challenges and motivators evolve at different stages of development.

Discipline-Specific Comparison

Conduct cross-disciplinary studies to explore how factors affecting persistence differ across STEM, humanities, social sciences, and business management. While the research identifies challenges unique to each discipline, detailed comparisons are still limited. Future studies could provide specific recommendations for each field, improving support systems tailored to each discipline.

Investigate Underrepresented Groups

Future research can shed light on the experiences of underrepresented groups, including women, minorities, and first-generation doctoral students. The research emphasizes systemic funding and supports inequalities for these groups. Exploring the unique challenges and motivations faced by doctoral students can help shape policies that promote equity and inclusion in doctoral programs.

Explore the Interaction Between Autonomy, Competence, And Relatedness

Explore how autonomy, competence, and relatedness work together to influence persistence, instead of treating them as separate factors. Understanding how these elements

interact can improve self-determination theory and provide a clearer picture of doctoral students' experiences. These were treated as separate constructions in this study, as per the theory.

Investigate Institutional and Policy-level Intervention

Explore how institutional reforms, such as increased financial aid, mentorship programs, and mental health services, affect the retention of doctoral students. This study highlights the importance of institutional support but does not specifically assess individual interventions. Future research could investigate the effectiveness of these strategies in enhancing completion rates.

Examine The Role of Technology and Online Learning

Examine how virtual communities, online resources, and remote learning environments influence the persistence and sense of connection among doctoral students. As online doctoral programs become increasingly widespread, it is essential to understand how technology fosters autonomy, competence, and relatedness.

Develop Stage-Specific Framework

Develop theoretical models that define persistence factors during the early, middle, and final stages of doctoral programs. This research highlights stage-specific differences in the roles of autonomy, competence, and relatedness. A well-structured framework can help guide interventions tailored to students' needs at every stage of their education.

Explore Psychological and Emotional Factors

Explore how mental health, stress, and emotional resilience influence the persistence of doctoral students. Although the study discusses psychological challenges like self-doubt and anxiety, it does not delve into their effects in detail. Future research could provide practical strategies to address these issues and enhance overall well-being.

Cross-Cultural Comparisons

Conduct studies across different cultures to examine how persistence factors vary among countries and educational systems. This research focuses on the United States, where cultural differences can significantly shape doctoral students' experiences. Cross-cultural studies can offer valuable insights into worldwide best practices for supporting these students.

Conclusions

By considering these aspects, future researchers can improve their understanding of the factors influencing doctoral students' persistence, refine theories such as self-determination theory, and develop more effective strategies to boost completion rates and student well-being. Examine how autonomy, competence, and relatedness interact and evolve throughout different stages and fields. Explore how these elements impact students from diverse cultural backgrounds and underrepresented groups. Study long-term trends in doctoral student retention to identify additional factors that contribute to their success. By applying these strategies, academic institutions can increase doctoral students' persistence, productivity, and achievements while also gaining a deeper understanding of the factors that shape their academic experiences. Attention will be given to the barriers faced by underrepresented groups and students in financially challenged fields.

Academic institutions must develop comprehensive support systems that integrate autonomy, competence, and relatedness into doctoral experience. This includes offering flexible program structures, mental health resources, and career counseling. Creating mentorship programs and peer networks can help alleviate feelings of isolation, foster a sense of community, and offer practical guidance for navigating academic challenges. Workshops tailored to specific disciplines, along with technical training and resources, can address the unique challenges in

STEM, the humanities, and business. For example, students in STEM fields may require enhanced technical training, while those in the humanities may benefit from assistance with qualitative research methods.

This study advocates resilience, urging institutions to focus on cultivating it by addressing psychological barriers such as self-doubt, anxiety, and impostor syndrome. Achieving this involves creating inclusive environments, offering mentorship, and implementing targeted interventions to support individuals. It also improves earlier research by providing a detailed understanding of how personal, academic, financial, and social factors affect doctoral students' persistence. It offers practical insights for advancing PhD education and practices, highlighting the importance of customized, phase-specific, and discipline-oriented support systems to enhance student well-being, reduce dropout rates, and improve academic success.

This study provides valuable insights to support individuals with degrees in their professional practice by addressing key factors that influence their persistence, productivity, and success during their doctoral journey. These insights can help enhance their professional growth and resilience in the workplace. The study highlights the importance of autonomy, competence, and relatedness as essential elements in overcoming challenges. Graduates can apply these concepts in their careers by taking charge of their choices and projects, fostering independence and leadership, and continuously improving their skills and knowledge to build confidence and succeed in their professions. This approach also helps build strong professional networks and relationships, enhancing collaboration and emotional support. The research emphasizes that effective time management is vital for achieving success. Degree holders can adopt these strategies to balance their professional duties, personal lives, and career development, thereby maintaining ongoing productivity and focus. The findings underline the importance of support

systems, including mentors, peers, and family. Degree holders should actively seek mentorship and cultivate professional networks to receive guidance, emotional support, and opportunities for collaboration and advancement.

The study highlights the financial challenges faced during doctoral studies. Graduates can apply the lessons learned to reduce financial stress in their careers by exploring funding options, negotiating salaries, and using professional development resources. Both intrinsic and extrinsic motivation are essential in maintaining persistence. Graduates can leverage this understanding to set career goals, seek personal growth, and ensure their professional practices align with their values and aspirations. The study emphasizes how psychological factors such as self-doubt and anxiety can influence individuals. Degree holders can enhance their mental health by seeking support, practicing self-care, and fostering a positive work environment, all of which are crucial to their overall well-being and professional performance. Additionally, it highlights specific challenges faced in different disciplines. Degree holders can adjust their professional approaches based on their fields; for example, STEM professionals may focus on developing technical skills and innovation, while those in the humanities might prioritize research methods and effective communication. Business professionals face issues related to representation and leadership.

The study emphasizes the significance of representation and empowerment, particularly for underrepresented groups. Degree holders can advocate for diversity and inclusion at their workplaces, helping to promote fair practices and leadership opportunities. It provides these individuals with practical strategies to face challenges, build resilience, and achieve success in their careers. By adopting self-determination principles, utilizing support systems, and addressing the unique needs of their respective fields, they can foster personal and professional

growth, make meaningful contributions to their areas, and maintain their well-being throughout their careers.

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Appendix A: Interview Protocol

Interviewer Introduction Script:

Thank you for agreeing to participate in my research study, which aims to explore how motivation, academic support, relationships, and demographic factors impact doctoral students' persistence in completing their studies. I am interested in gaining a deeper understanding of this phenomenon through students' lived experiences. Please feel free to express your opinions, feelings, and concerns at any time during this interview. You will not be required to answer any questions that make you feel uncomfortable. As you will recall from the consent letter for this study, all interactions during this interview will be recorded and transcribed for future reference. You were given a copy of this consent form with specific information on how your data will be stored, protected, analyzed, and discarded within university guidelines to ensure the protection of participant privacy.

The interview will contain two parts. The first part will ask you about your personal demographics, which will help me better understand you and your perspective. The second part will ask open-ended questions essential to this study. These questions have been reviewed for conciseness and are designed to capture relevant information concerning this study. I encourage you to share any additional information you believe may not have been asked and could help clarify the motivational factors that influence persistence, productivity, and success. Participating in this research study is voluntary; participants must provide informed consent.

Do you have any questions that I can answer before we begin? Do you want to participate in this study?

If there are no questions, let us begin the study interview.

Demographic Questions

What would you like your alias name to be? _____

Year of Birth: _____
How would you self-identify your gender? _____
Race or Cultural background: _____

1. At what university did you complete your degree?
2. In what subject/discipline is your doctoral degree?
3. How many years did it take to complete your doctoral degree?

This study examines the persistence of doctoral students in completing their programs. Therefore, it aims to understand in depth which factors impact doctoral students' persistence in completing the program through their experiences. I congratulate you on completing your doctoral degree, and I believe you have overcome numerous challenges throughout your studies. I will ask you questions exploring the perceived barriers that may have slowed your progress toward completing a doctoral dissertation.

1. What initially motivated you (internally, externally, or both) to pursue a doctoral degree?
2. How vital were career prospects and employment opportunities in motivating you to complete your doctoral degree?

   SLIDE WITH DEFINITION OF PERSISTENCE
3. How would you describe your persistence while pursuing your doctoral degree?

   SLIDE WITH CHAPTERS OF THE DISSERTATION
4. In what chapters of your dissertation did you experience significant obstacles?

   SLIDE WITH QUESTIONS ABOUT OBSTACLES
5. Next, I would like to discuss these obstacles and the questions on each slide.

For the first (second, third) obstacle.

a) Please describe the obstacle.

b) How did the obstacle impact your academic progression?

c) How did you persist when faced with this obstacle?

d) How did this obstacle affect your motivation to continue?

e) How did overcoming obstacles make you feel about your ability to complete your degree?

6. Thank you for sharing these obstacles with me. I will now ask you about specific support you might have to help you persist.

SLIDE WITH TYPES OF SUPPORT

7. Please describe if and how each of these types of support was helpful to your persistence.

   PEER, FAMILY, CHAIR, COMMITTEE, ADMINISTRATIVE, FINANCIAL AID

   a) What role did your sense of belonging or connection with peers play in your academic journey?

SLIDE WITH DEFINITION OF AUTONOMY

8. Did you feel you had control over your decisions and academic journey? Can you share examples? Did you feel you had control over your decisions and academic journey as described on the slide?

SLIDE WITH DEFINITION OF COMPETENCE

9. Did you feel competent as described on the slide? Can you provide examples?

SLIDE WITH DEFINITION OF RELATEDNESS

10. Did you feel a sense of relatedness as described on the slide? Can you provide examples?

Appendix B: Interview PowerPoint Slides

Appendix A Interview Slides.pptx

Appendix C: Social Media Post

My name is Salim A Qureshi, and I am a doctoral student at National University. I am conducting a research study to understand, in depth, the motivational factors that have affected doctoral students' persistence, productivity, and success through their experiences, which are invaluable to our research.

I am recruiting individuals who meet all these criteria:

1. Doctoral students/ PhD who have completed their doctoral degrees between 2020 and 2023, from online or traditionally face-to-face learning environments, regardless of discipline, university, and are willing to share their experiences.

If you decide to participate in this study, you will be asked to do the following activities:

1. The participants will participate in the interview, which will be conducted on a face-to-face virtual platform using the Zoom app.

During these activities, you will be asked questions about:

- Semi-structured open-ended questions will be asked about their experiences during the completion process of their doctoral studies. Questions will be asked about motivation, academic support, relationships, and demographic factors (such as age, marital status, professional development, field of study, and networking) that may have impacted their persistence in completing their doctoral degree.

After completing the interviews, one participant's name will be randomly selected, and one $25 Amazon e-gift card will be emailed.

If you are interested in participating in this study or have questions, please get in touch with me at salimaqureshi51@gmail.com

Thank you for considering participating in this voluntary research!

Salim A Qureshi

Appendix D: Consent Form

My name is Salim A. Qureshi. I am a doctoral student at National University (NU) and a correctional officer at the Texas Department of Criminal Justice.

I am asking you to participate in a research study on doctoral students' persistence in completing their programs. The study's name is "A Qualitative Descriptive Study of Doctoral Students' Completion."

You may participate in this research if you meet all the following criteria:

1. Doctoral students/ PhD who have completed their doctoral degrees between 2020 and 2023 from online or traditionally face-to-face learning environments, regardless of discipline or university, and are willing to share their experiences.

I plan to include a minimum of 10 people and a maximum of 15 in this research.

Please read this form carefully and ask any questions you may have before agreeing to take part in the study.

What you will be asked to do: If you agree to be in this study, you will be asked to do the following activities:

1. The research activity will involve an interview conducted on a virtual platform using the Zoom Application.

2. Participate in a 1:1 online interview over Zoom for 45-60 minutes.

During these activities, you will be asked questions about:

- Semi-structured open-ended questions will be asked about doctoral students' experiences during their doctoral degree program completion. Questions will be asked about motivation, academic support, relationships, and demographic factors that may have impacted their persistence in completing their doctoral degree. For example.

4. At what university did you complete your degree?
5. In what subject/discipline is your doctoral degree?
6. How many years did it take to complete your doctoral degree?

7. What initially motivated you (internally, externally, or both) to pursue a doctoral degree?
8. How vital were career prospects and employment opportunities in motivating you to complete your doctoral degree?

Risks: There are minimal foreseeable risks or discomforts associated with this research. You can skip any question you do not wish to answer, skip any activity, or stop participating at any time, ensuring your comfort and control.

To decrease the impact of these risks, you can skip any question you do not wish to answer, skip any activity, or stop participating at any time.

While you will not receive any direct benefits, your participation will significantly contribute to the body of knowledge in this research area.

Recording: I would like to record your responses and actions using [name the recording device, such as a voice recorder, a Zoom video Call, or an interview setup]. You can turn off the video function of the online meeting platform at any time.

Compensation: After completing the interviews, a $25 Amazon e-gift card will be drawn and emailed.

Confidentiality: I will maintain the confidentiality of this study's records and take reasonable measures to protect the security of all your personal information. In any report I make public, I will not include any information that could identify you. I will ensure that information about individual participants is restricted to the researcher, my advisor, and any research assistants on a need-to-know basis. The utmost care will be taken to avoid breaches of confidentiality, ensuring that participants' information is not disclosed to anyone else and that your complete privacy and security are maintained.

Participation in this study is entirely voluntary. You may quit at any time.

If you have any questions, please do not hesitate to ask them now. If you have questions later, contact me at salimaqureshi51@gmail.com or squreshi0547@o365.ncu.edu.

If you have any questions or concerns regarding your rights as a subject in this study, you may contact the Institutional Review Board (IRB) via email at irb@nu.edu

Appendix E: Field Test of Interview Guide

Field Tester 1: Dr. Erin Breitenbach, PhD, Med, Professor and Program Chair at Still University

Suggested Edits: Dr. Breitenbach suggested clarifying the connection between demographic questions and the study's purpose. For example, the significance of collecting data on race or cultural background could be better contextualized in the interview introduction. She also suggested asking participants about their "significant obstacles" in specific dissertation chapters that could be more explicitly tied to factors influencing persistence. Another suggestion was to rephrase an interview question instead of asking, “Did you feel a sense of autonomy as described on the slide?” to: “Did you feel you had control over your decisions and academic journey? Can you share examples?” "How did this obstacle affect your motivation to continue?" might feel more conversational.

Edits Made: I clarified the connection between demographic questions, the study's purpose, and the rewarding interview slides and guide. For example, I contextualized the significance of data collection in the interview introduction, adding questions about race or cultural background to better understand participants’ experiences. I also revised the queries to be more conversational, such as 'How did this obstacle affect your motivation to continue?' And 'How did overcoming obstacles make you feel about your ability to complete your degree?' The rationale behind these changes is to make the questions more engaging and to encourage participants to share their experiences more openly. I also rephrased the question about autonomy to be more direct and understandable: 'Did you feel you had control over your decisions and academic journey? Can you share examples, as described on the slide? Can you provide examples?

Field Tester 2: Carbonaro, Salvatore, PhD, LP, PCDC, Behavioral Health Counselor

Dr. Carbonaro has emphasized the importance of all participants understanding the primary goal of this study. For example, this dissertation examines the factors doctoral students perceive during their studies. The interview introduction explains doctoral students' persistence in completing their dissertations by exploring the perceived barriers that slow their progress. He also emphasized adding the personal meaning of 'persistence' or 'perseverance' to the slides. For example, perseverance is the continued effort and determination to achieve a goal or complete a task despite difficulties, obstacles, or delays. It involves persistence and steadfastness in pursuing an objective, even when progress is slow or challenging. Otherwise, he commented that my interview guide is well-aligned with the problem, purpose, research questions, and interview questions. Still, he worried that the language barriers, particularly for international doctoral students, may impact their understanding and participation in the study.

Edits Made: I reviewed Dr. Carbonaro's suggestions and made edits to my interview guide and slides. I added to my study's introduction that "this dissertation research study explores factors they have perceived that doctoral students perceive during their studies. The interview introduction explains doctoral students' persistence in completing their dissertations by exploring the perceived barriers that slow their progress. I also added one more slide to the PowerPoint presentation. This additional slide provides a brief overview of the study and expresses appreciation for the participants' efforts. The reads, "This study is about doctoral students' persistence in completion. Therefore, it aims to understand the factors that affect doctoral students' persistence in completing their studies by examining their experiences in depth. This dissertation examines the factors doctoral students perceive during their studies. This interview introduction also explains doctoral students' persistence in completing their dissertations by exploring the perceived barriers that slow their progress. I congratulate you on achieving your

doctoral degree, and I believe you have overcome several challenges during every step of the study completion process. With your consent, I will ask you some semi-structured, open-ended questions during an interview (data collection) for my study. “

Appendix F: IRB APPROVAL LETTER

9388 Lightwave Ave.

San Diego, CA 92123

irb@nu.edu

Notice of Exemption

March 27, 2025

To: Salim Qureshi

Project Title: A Qualitative Descriptive Study of Doctoral Students' Completion

NU IRB Number: IRB-FY24-25-369

Determination: Exempt from further review 45 CFR 46.101 Category 2. (ii). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:

Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation; or

Status: Active - Research activities may begin as of March 27, 2025

Dear Salim Qureshi:

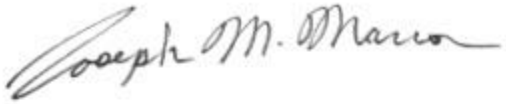
The National University IRB has reviewed the study referenced above. The IRB has determined your research is exempt from further review under 45 CFR 46.104, which means you will not

need to renew your study and may begin your study effective immediately. However, if you find the need to change your study in any way, you will need to submit a modification to the IRB prior to implementing the changes. This will enable the IRB to determine whether the study still meets the exemption criteria.

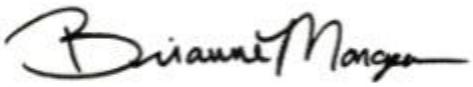
Please review your Post Approval Responsibilities here: Approved Documents Guidelines

For any questions regarding your protocol, please reach out to the IRB at irb@nu.edu.

Sincerely,



Dr. Joseph Marron, IRB Chair



Dr. Brianne Mongeon, Director, HRPP & IRB

Jenessa Eberhardt, Associate Director, HRPP & IRB

Appendix G: Notice of Protocol Closure

June 16, 2025

To: Salim Qureshi

Project Title: A Qualitative Descriptive Study of Doctoral Students' Completion

NU IRB Number: IRB-FY24-25-369

Status: Closed as of June 16, 2025

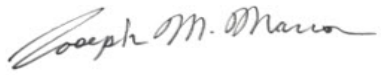
Dear Salim Qureshi:

Thank you for your submission of materials for this research study. The National University Institutional Review Board has CLOSED your project. You must adhere to the following conditions:

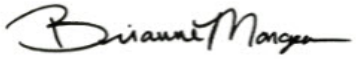
1. Once a study has been officially closed via a Request to Close Study, it cannot be reopened.
2. If a later use for the research data is identified, you must submit a new research proposal for the use of the previously collected data.
3. The latter use of the data may qualify for an exemption if the existing data is recorded without identifiers; however, you must submit a new research proposal prior to using the data.
4. You will maintain the confidentiality of all data collected and will adhere to the federal policy of storing all data and consent documents in a secure environment for a minimum of 3 years.

If you have any questions, you may contact the IRB at irb@nu.edu. Please include your study title and reference number in all correspondence with this office.

Sincerely,



Dr. Joseph Marron, IRB Chair



Dr. Brianne Mongeon, Director, HRPP & IRB

Jenessa Eberhardt, Associate Director, HRPP & IRB