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FACTOR ANALYSIS OF THE DISSERTATION BARRIERS SCALE: EVIDENCE
FOR DIMENSIONALITY AND CONSTRUCT VALIDITY

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FACTOR ANALYSIS OF THE DISSERTATION BARRIERS SCALE: EVIDENCE
FOR DIMENSIONALITY AND CONSTRUCT VALIDITY

A Dissertation APPROVED FOR THE
DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

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Abstract

The research participants consisted of 319 graduate students from APA-approved doctoral programs. Five instruments were administered for this study: Dissertation Barriers Scale (DBS), Self-Efficacy in Research Measure (SERM), Advisor Working Alliance Inventory – Student Version (AWAI-S), Multidimensional Scale of Perceived Social Support (MSPSS), and a demographic questionnaire. The findings of this study indicated a 5-factor solution for the DBS and provided some evidence of reliability and validity. Also, multiple regression analyses revealed relationships between the DBS components and various subscales of the SERM, AWAI-S, and the MSPSS and the DBS total score and select demographic variables. Advisors and department chairs can use the information provided by the DBS to plan coursework, review advisor/advisee relationship characteristics, and highlight practical considerations in the personal lives of students.

Introduction

According to Bowen and Rudenstine (1992) only 50% of incoming graduate students complete their degrees. Also, completion rates have decreased since the mid-1960s, and time to degree (defined as number of years between the awarding of the BA and the awarding of the Ph.D.) has increased (Bowen & Rudenstine). The authors noted that time to degree had its most significant increases in the humanities and social sciences and that there were systematic differences across fields of study with higher completion rates in science fields.

These negative changes in completion rates and time to degree are problematic for many reasons. First and foremost is the time, money, emotional energy, and sacrifices made by the individual student and his or her family to engage in graduate study. To complete all required coursework and general exams but to fail to complete the dissertation and graduate can be expensive and painful to the student and his or her family (Green & Kluever, 1997). Second, students who remain ABD are a cause for concern for university faculty and program status, especially for those faculty who have invested time and energy in students who inevitably do not complete their degree (Green & Kluever). Third, a high number of non-completers may be deleterious to the reputation of the university itself (Green & Kluever). Fourth, concerns have been raised regarding the number of professors and faculty who will be necessary to teach in institutions across the United States compared to the number of completed Ph.D. students (Bowen & Rudenstine, 1992). Finally, our society is based on the research and innovative thinking of graduate students. The National Commission on Student Financial Assistance (1983) declared graduate education and research as the “bedrock of every important area of our

national life” (p. 16) and drew examples such as the economy, diplomacy, defense, security, and American life to illustrate the point.

ABD was defined by Bowen and Rudenstine in 1992 as “students leaving graduate study without receiving a Ph.D. after finishing all requirements except the dissertation” (p. 427). These authors subsequently found that “students who had achieved ABD status had roughly an 80 percent chance of finishing a dissertation and receiving a Ph.D.” (p. 112). Sanchez-Hucles and Cash (1992) found that 24.3% of students who were eligible to complete their doctorate remained ABD after 2 years. Sternberg (1981) claimed that “half of all ABDs writing full-fledged dissertations never finish, although the percentages vary considerably from discipline to discipline” (p. 26). These are extremely alarming rates considering the financial, psychological and programmatic problems that ABD status can cause (see above).

Sternberg (1981) characterized the dissertation process from the viewpoint of his students in the process of completing their dissertation. “When I ask my students or clients to word-associate to their dissertations, some combination of the following responses is typical: fear, agony, torture, guilt, no end in sight..., anxiety, boredom, hate, despair, depression, humiliation, powerlessness” (p. 13). He identified inadequate support systems, lack of graduate student community, lack of faculty recognition for dissertation advising, the lack of preparedness of the Ph.D. candidate to complete the dissertation project, and the change in expectations from coursework to dissertation placed on the ABD student as reasons why many students fail to complete their dissertations even after completing all other requirements.

Literature Review

The results of research in the area of graduate completion rates, time to degree, and contributing factors to ABD status has prompted several theories of doctoral retention which shall be discussed in the section that follows.

Theories of Doctoral Retention

Two main theories in the area of doctoral retention include Tinto's (1993) Theory of Doctoral Persistence and Girves and Wemmerus' (1988) Model of Graduate Student Degree Progress. Tinto's theory is based on his 1975 Theory of Undergraduate Retention that has been revised and updated many times in the years since. Tinto argued that many differences exist between undergraduate and doctoral persistence but that the main difference is that "graduate persistence is also shaped by the personal and intellectual interactions that occur within and between students and faculty and the various communities that make up the academic and social systems of the institution" (p. 231). In this regard, doctoral persistence is likely to be "more of a reflection of the particular normative and structural character of the specific field of study" (p. 232) and "is but an early stage of a more general theory of professional career attainment" (p. 233).

Tinto (1993) noted that doctoral persistence is marked by three distinct stages titled transition, candidacy, and completion of the doctoral dissertation. The final stage, doctoral dissertation completion, reflects the individual students' ability to complete the doctoral dissertation. It also involves the role of faculty in supporting this attainment. Tinto noted that the role of external communities including families, jobs, etc. gain added importance at this stage of persistence. He went on to state that "the completion of this final stage of doctoral persistence calls for the availability of financial resources, both

personal and institutional, that enable the candidate to devote the time needed to complete the research project” (p. 241).

Tinto (1993) also created a longitudinal model that indicated the variables theorized to affect student persistence at each of these stages. In the final stage of doctoral dissertation completion, Tinto noted that the main variables are research opportunities, faculty/advisor relationships, financial support and external commitments.

A second theory of doctoral retention is Girves and Wemmerus’ (1988) Model of Graduate Student Degree Progress. The authors described a model for graduate progress and tested the model in this article. In the Empirical Model of Doctoral Student Degree Progress, two stages are described. The first involved variables such as department characteristics (size of department and university and faculty commitment, research and service), student characteristics (age, gender, ethnic group, marital status, and being a parent), financial support (individual versus external support), and perceptions of the faculty (relationships between faculty and students). The second stage involved the following variables: graduate grades, involvement (student participation in projects and activities involving faculty and students outside of the classroom), and satisfaction/alienation (combination of department characteristics and satisfaction with faculty relationships as well as a feeling of “fitting in”). The authors found that department characteristics and perceptions of the faculty had a direct effect on student progress, while financial support had an indirect affect on progress by affecting involvement. They noted that student characteristics affected grades, but that neither had an effect on degree progress. They also found that satisfaction/alienation was affected by perceptions of the faculty but that it had no impact on degree progress.

Both Tinto (1993) and Girves and Wemmerus (1988) posited models agreeing that relationships with faculty and financial support are important variables affecting degree progress and dissertation completion. Tinto further noted that the role of external communities including families and jobs, research opportunities, and external commitments impact the persistence of doctoral students in the dissertation phase of study. Girves and Wemmurus added that department characteristics had a direct effect on student progress towards degree completion. These variables as well as the variables from the previous discussion on time to degree, completion rates, and the ABD phenomenon could be expected to be observed empirically as related to dissertation completion. As this is the case, these variables will be discussed in the following section.

Variables that Influence Dissertation Completion

Overall, there has been a dearth of systematic research exploring the variables that predict or explain failure or lack of progress in completion of the dissertation (Green, 1997). Of the articles located for this research, many were guides and not empirical articles (Long, Convey, & Chwalek, 1985; Malley-Morrison, Patterson, & Yap, 2003; Martin, 2001; McMichael, 1992; Monsour & Corman, 1991; Moore, 1985). Another large portion of the existing literature in this area is accounted for by dissertations (Bako-Okolo, 1996; Geisler, 1996; Hobish, 1978; Lenz, 1995; Morgan, 1995; Peacock, 1996; Sattell, 2002; Wagner, 1987). The empirical books and articles that do exist often seek to validate specific measures for use in the area of dissertation completion (Green & Kluever, 1996; Green & Kluever, 1997; Johnson, Green & Kluever, 2000; Kluever & Green, 1998). Of the empirical investigations in the literature, many used participants across disciplines. College of Education students were used in only 11 cases (Bako-

Okolo; Brown & Slater, 1960; Evans, 1996; Faghihi, Rakow, & Ethington, 1999; Green; Green & Kluever, 1996; Kluever, 1997; Kluever & Green; Kluever, Green, & Katz, 1997; Kluever, Green, Lenz, Miller, & Katz, 1995; Lenz, 1995) and psychology students in only 7 cases (Geisler, 1996; Johnson et al., 2000; Krieshok, Lopez, & Somberg, 2000; Morgan, 1995; Muszynski & Akamatsu, 1991; Phillips & Russell, 1994; Sattell, 2002). This finding is interesting since Bowen and Rudenstine (1992) noted that completion rates and time to degree vary across degrees. They indicated that time to degree is increased for students in the humanities and social sciences. Other authors have noted that students majoring in education and specifically in psychology take longer to graduate (Abedi & Benkin, 1987; Baird, 1990). Therefore, it seems important to study graduate students in education and psychology in order to find out specifically what hinders their progress toward degree completion compared to other disciplines. A range of variables has been explored in the literature on barriers and supports to dissertation completion with some interesting findings. The variables that have been studied can be categorized into three domains: demographic variables, internal variables, and external variables.

Demographic Variables. Demographic factors such as gender, ethnicity, age, marital status, number of dependents, financial support, employment status, geographical distance from the university, and career goals have been studied in the literature regarding dissertation completion. Gender is a variable that yielded mixed results. Several studies in the area of gender concluded that being female can be a barrier to dissertation completion (Abedi & Benkin, 1987; Germeroth, 1991; Hobish, 1978; Ploshonka, 1994; Moore, 1985). However, these authors noted that the effect of gender can be explained in many ways. Abedi and Benkin stated that the differences by gender

can be explained by the field of study in which the student is enrolled. Since women are enrolled in fields with longer times to doctorates, such as education, they take longer to degree completion. This was reiterated by Ploshonka who added that financial support is more likely to be awarded in fields where women are not highly concentrated, such as agriculture, mathematics, and engineering. Because of the significance of financial support to degree completion alluded to in theory, gender may be confounded by financial issues. Moore (1985) and Germeroth (1991) noted another interesting variable affecting gender's role in degree completion. They found that role conflict between student, spouse, and parent roles is more likely to affect women than men and cite this as a reason why women are more likely to fail to complete the dissertation. Moore also noted that women are more likely to experience role conflict between student and parent roles. He further stated that parenthood can have an effect on both genders but that it appears to be more severe for women. Jacks, Chubin, Porter, and Connolly (1983) supported these findings and found that family problems were more significantly related to a woman's ability to complete her degree. On the other hand, researchers such as Girves & Wemmerus (1988), Krieschok et al. (2000), and Phillips and Russell (1994) concluded that gender had no independent effect on dissertation completion outside of the variability accounted for by degree and financial support. It appears, however, that much of the data in this area supports the difficulty that women experience attaining their degree, especially in relation to gender roles, degree choice, marital status, and/or number of children.

Ethnicity and age have not been widely researched in regard to dissertation completion. Girves and Wemmerus (1988) found that ethnicity was not related to

dissertation completion. Abedi and Benkin (1987) support this finding by noting that although the interaction of citizenship and field accounted for a significant amount of variance, it was not enough to be included in the regression equation after postdoctoral plan, number of dependents, gender, and field of study. These limited results would indicate that ethnicity is not related to dissertation completion. Age, on the other hand, was shown in one study (Peacock, 1996) to be a barrier to dissertation completion when the doctoral student is of increased age (defined as older than 35 years old).

Marital status and number of dependents is another demographic variable affecting dissertation completion. Marital status and number of dependents can, however, be complicated by financial support and emotional support/problems, which shall be addressed in later sections. Several authors noted that family problems can delay completion or can cause failure to complete the dissertation, while family support can make completion more likely (Jacks et al., 1993; Lenz, 1995; Lenz, 1997; Long et al., 1985; Moore, 1960; Moore, 1985; Rode, 1999). On a similar note, Wagner (1987) found that having a spouse was a supportive factor for completion, while Rode noted that personal and family changes, problems and illness could be a barrier to completion. Krieshok et al. (2000) also stated “pity the intern who marries or adds a new family member while on internship” (p. 330) as a hazard to dissertation completion. Abedi and Benkin (1987) concluded that “doctoral students who have larger families may have a great deal of moral support, but they also have to spend time with others that could be spent on their studies. In addition, they are also more likely to have to work to help support their families” (p. 12). They found that number of dependents was highest in predictive ability for time taken to degree completion after source of financial support

and postdoctoral plans. On the other hand, Girves and Wemmerus (1988) concluded that marital status was unrelated to completion of the dissertation. Overall, the research in this area points to the mixed role that families can play. On one side, families and children can provide emotional support and stability to the ABD candidate. However, when problems arise, marital status and children can take attention away from the ABD's focus on dissertation and degree completion.

As mentioned previously, marital status and number of dependents is also related to financial issues, including financial support and employment status. Financial support has been shown to support dissertation completion (Rode, 1999), and lack of financial support has been shown to be a barrier to completion (Abedi & Benkin, 1987; Berelson, 1960; Bowen & Rudenstine, 1992; Brown & Slater, 1960; Germeroth, 1991; Jacks et al., 1983; Kluever, 1997; Lenz, 1995; Lenz, 1997; Long et al., 1985; Moore, 1960; Wagner, 1987). The National Commission on Student Financial Assistance (1983) went as far as recommending increased support for talented graduate students, in particular women and minorities, recognizing the burden of financial issues on graduate students in the U.S. and the impact of financial problems on graduate student attrition. In addition, work schedule (Wagner), change in working conditions (Peacock, 1996), job demands (Germeroth; Moore; Rode), working full-time, and completing an internship or teaching load (Long et al.; Martin, 2001; Wright, 1991) can be a barrier to completing the doctoral dissertation. Along the same line, Wagner and Krieschok et al. (2000) found that students who completed the dissertation proposal prior to accepting employment or beginning an internship were more likely to make progress on the dissertation and inevitably complete it. Across theories and literature in this area, financial support is posited as a highly

important variable related to graduate degree completion. Abedi and Benkin concluded that the source of financial support predicted more variance in time to degree than postdoctoral plans, number of dependents, sex, and field of study. Bowen and Rudenstine also found that “students who had to rely primarily on their own resources had markedly higher attrition rates and longer time to degree than students who received various forms of financial aid” (p. 12). Clearly, financial issues have a great impact on dissertation and degree completion.

Related to employment status, geographical distance from the university has been shown in several cases to be related to completion (Muszynski & Akamatsu, 1991; Wagner, 1987; Wright, 1991). Those students who remained close to the university they were attending were more likely to complete their dissertations. Access to university resources and services and access to university personnel could account for this result.

Additionally, career goal has been shown to be related to dissertation and degree completion. Wagner (1987) found that students’ priority for obtaining their Ph.D., which is related to career goal, was shown to support dissertation completion. Baird (1990) also indicated that students who were interested in working as university faculty were more likely to complete their degree than students with other career goals. These findings suggest that postdoctoral plans as well as the additional demographic variables mentioned above can affect dissertation and degree completion in both positive and negative directions.

Internal Variables. Internal variables such as research self-efficacy, individual characteristics and time pressures/stress have also been shown to be related to dissertation completion. As indicated by theory, research skills and confidence in one’s ability to

complete the dissertation has been an area of study related to dissertation completion. Faghihi et al. (1999) found that research self-efficacy and relationship with committee predicted completion of the dissertation regardless of the students' age, gender, financial problems, and years in the program. He also found that graduate assistants who were more likely to be involved in research prior to the beginning of the dissertation process were more likely to have higher research self-efficacy and were more likely to complete the dissertation. Phillips and Russell (1994) found that research self-efficacy was a supportive factor to completion of the dissertation, while Geisler (1996) found that research self-efficacy was the most important factor in predicting dissertation completion. Related to self-efficacy, research experience (Kluever, 1997), feelings about statistics (Wagner, 1987), technical skills (Long et al., 1985), and focus on research skills in the doctoral program (Martin, 2001) were shown to affect dissertation completion in the direction expected. Furthermore, Bako-Okolo (1996) found that research self-efficacy correlated with research training environment and goal setting. He also found that performance in statistics courses could independently account for differences in research self-efficacy. In summary, research self-efficacy has been found to be an overwhelming predictor of a student's ability to complete the dissertation and doctoral degree.

Individual characteristics have also been studied in relationship to dissertation completion. Variables that have shown to support dissertation completion have been one's own determination (Germeroth, 1991), higher scores on the California Personality Inventory subscale of achievement via independence (Hobish, 1978), level of masculinity (Hobish), a preference for Sensing on the Myers Briggs Type Indicator (Peacock, 1996), and personal organization and skills (Green & Kluever, 1997). Individual characteristics

shown to be a barrier to dissertation completion include procrastination (Green, 1997; Johnson et al., 2000; Muszynski & Akamatsu, 1991), lack of persistence (Kluever, 1997), excuses and lack of commitment (Long et al., 1985). Muszynski and Akamatsu (1991) found that specific elements of procrastination such as low frustration tolerance, rebellion, self-denigration, insufficient reinforcement/lack of structure, and task aversion showed significant effects in dissertation delay. Finally, perfectionism has been found to show no affect on dissertation completion (Green) or to enable or inhibit dissertation completion based on the person's manifestation of this characteristic during the dissertation process (Lenz, 1995; Lenz, 1997). In summary, a variety of individual characteristics have been shown to affect either positively or negatively the completion of the dissertation.

Finally, time pressures and stress have been studied in this area. Krieshok et al. (2000) found that the best predictor of dissertation completion was the number of hours spent on the dissertation. In contrast, time pressure, time management problems, and lack of time were found to be barriers to completion (Green & Kluever, 1997; Kluever, 1997; Lenz, 1995; Lenz, 1997; Martin, 2001; Wagner, 1987). Also, stress, personal or family changes, problems, or illnesses, and external pressure were found to be barriers to dissertation completion (Green & Kluever; Lenz; Rode, 1999). More specifically, Peacock (1996) found that having a limited number of life changes such as moving, getting married, having a child, etc. supported students in completing the dissertation. Consequently, many internal variables have been shown to relate to dissertation completion including research self-efficacy and research skills, individual personality characteristics, time pressures, and stress.

External Variables. Two important external variables that have been supported in the literature regarding their impact on degree completion include emotional support and relationship with advisor/committee. Emotional support appears to have a significant impact on the likelihood a student will complete the dissertation. Support from family (Germeroth, 1991; Lenz, 1995; Lenz, 1997; Peacock, 1996), peers (Germeroth; Lenz; 1995; Lenz 1997; Rode, 1999), a higher power (Germeroth, 1991), a counselor (Germeroth), or a support group (Evans, 1996) has been shown to enhance the likelihood of dissertation completion. Emotional support in general was also found to support dissertation completion (Sattell, 2002; Sigafus, 1998). The opposite has also shown to be true. For instance, the lack of feedback and reinforcement and family problems were found to be a barrier to dissertation completion (Long et al., 1985; Moore, 1960).

Lastly, the relationship between the dissertation chairperson/advisor/committee and the student can have a profound affect on dissertation completion. A perceived positive relationship with the advisor and committee, access to the advisor, and having a caring and supportive advisor was shown to enhance the likelihood of dissertation completion (Faghihi et al., 1999; Kluever, 1997; Lenz, 1995; Lenz, 1997; Muszynski & Akamatsu, 1991; Peacock, 1996; Rode, 1999; Wagner, 1987). Faghihi et al. found that the relationship with the advisor and committee and research self-efficacy were the two most important variables to predicting dissertation completion regardless of gender, age, financial support or number of years in the program. Jacks et al. (1983) supported these findings by noting that no guidance or encouragement from the advisor or problems with the doctoral committee could be a barrier to dissertation completion. Lastly, Cheatham, Edwards, and Erickson (1982) surveyed speech communication doctoral students and

found that candidates desired more and quality interaction with their advisors and committees in order to support their dissertation progress. The advisor/advisee relationship, the committee/student relationship, and emotional support appear to have a powerful effect on dissertation completion.

Demographic and internal and external variables have been alluded to in theory and have been empirically shown to be related to time to degree, degree completion and dissertation completion. However, no quantitative measure of these variables had been represented in the literature until the creation of the Dissertation Barriers Scale (Green & Kluever, 1997). This measure may be an important addition to the literature in light of the significance of doctoral degree completion, the theories of doctoral degree retention, and the literature on barriers and supportive variables to dissertation completion. However, the Dissertation Barriers Scale is a relatively new measure that has not been widely used in the literature. A discussion of this measure follows.

The Dissertation Barriers Scale

The Dissertation Barriers Scale (DBS; Green & Kluever, 1997) consists of 45 items that assess “doctoral students’ and graduates’ concepts of barriers to dissertation completion” (p. 5). However, the authors concluded in this study that 6 items should be deleted due to problems with fit and usefulness, bringing the total of items for the scale to 39. The purpose of the instrument is to research the dissertation process and identify important barriers to completion, and the goal of research with this instrument would be to improve mentoring of doctoral students.

Detailed information on the development of the DBS was obtained from an unpublished study by Green and Kluever (1997). This study was completed with

participants from the College of Education at an private urban university. Participants included 239 graduates and students who had begun the program at about the same time. Graduates had completed their dissertations, while students had not. Males made up 29% of the sample, while females made up 71% of the sample. Demographic information on the sample concluded that students ranged in age from 28 to 70 years ($M = 44.4$ yr.), while graduates ranged in age from 27 to 63 years ($M = 41.8$ yr.). Also, a large percentage of graduates and students were employed full-time (92% of male graduates, 72% of female graduates, 89% of male students and 72% of female students).

Green and Kluever (1997) found that a discriminant analysis correctly predicted membership in either the student or graduate group for 81% of the respondents. The total scale score reliability was measured by coefficient alpha of .91. They also found a 4-factor solution for the instrument. These factors were labeled Advisor/Committee Functioning, Personal Organization and Skills, Time Management and External Pressures, and Research Skills, with resulting reliabilities of .82, .81, .81, and .71 respectively.

Only two other studies have included the DBS. One study by Green and Kluever (1997) also administered measures of procrastination and responsibility. They found low to low-moderate negative correlations between the factors on the DBS and the subscales on both the measures as well as with the total score of the procrastination instrument. Another study conducted by Johnson et al. (2000) used the Dissertation Barriers Scale as a validity measure for another measure. They found significant correlations between the DBS and their measure of procrastination. This preliminary research suggests that the DBS appears to have decent psychometric properties but that the measure would benefit from further testing.

Summary

Completion of the dissertation is a long and tedious process that can be hindered by many variables. Demographic and internal and external variables have been alluded to in theory and have been empirically shown to be related to time to degree, degree completion and dissertation completion. However, no quantitative measure of these variables had been represented in the literature until the creation of the Dissertation Barriers Scale (Green & Kluever, 1997). The Dissertation Barriers Scale (DBS) seeks to quantify several of these variables and may prove to be an important measure for understanding doctoral students' and graduates' perceptions of barriers to dissertation completion. The DBS also appears to have a high degree of predictive ability and may be useful in further research to determine how to best support students in the dissertation completion process. Additionally, the DBS may have practical implications for university administrators and faculty advisors in highlighting areas of focus for their individual work with students. Finally, this study seeks to contribute unique knowledge to the literature by surveying a specific sample of doctoral psychology students from APA-accredited psychology programs. Because there has been limited research on the DBS to date, the purpose of this study is to investigate the psychometric properties of the DBS such as reliability, validity, and factor structure. The overarching research questions to be addressed in this study will be (a) What is the factor structure of the DBS?; (b) What are the psychometric properties (reliability and construct validity) of this instrument?; (c) Does a linear combination of the total scores on the SERM, AWAI-S, and MSPSS predict the component scores of the DBS?; and (d) What demographic variables predict DBS total scores?

Method

Participants

The research participants consisted of 319 graduate students from APA-approved doctoral programs across the United States and Canada who are/were required to write a dissertation as part of their program requirements. Fifty-two percent of students identified their age as 20-29 and 38% identified their age as 30-39. Only 10% of students identified their age as 40+. Approximately 82% of subjects were female ($n = 263$) and 18% were male ($n = 56$). Participants were distributed across APA-approved psychology programs as follows: 150 clinical (47%), 78 counseling (25%), 74 school (23%), and 17 other (5%). The ethnic composition of the sample was 255 (80%) Caucasian/White, 17 (5%) African American, 23 (7%) Hispanic, 7 (2%) Asian American, and 17 (5%) other. Approximately 189 (59%) participants identified themselves as being married or in a committed relationship while 130 (41%) identified themselves as being single, divorced, or widowed. A large portion of the participants indicated that they had a child or children ($n = 255$, 80%). Of the participants, 215 (67%) had completed comprehensive exams, 42 (13%) had completed internship, and 62 (19%) had completed their dissertations and graduated.

Participants were recruited via emails distributed through the training directors of APA-approved psychology doctoral programs. Participation in the study was strictly voluntary, and participants had the option of entering their names into a raffle for a \$50 gift card.

Instruments

Four instruments were administered for this study: the Dissertation Barriers Scale (DBS), the Self-Efficacy in Research Measure (SERM), the Advisor Working Alliance Inventory – Student Version (AWAI-S), and the Multidimensional Scale of Perceived Social Support (MSPSS). In addition, a demographic questionnaire (Appendix E) was completed. The SERM, the AWAI-S, and the MSPSS were included in this study in order to provide validity testing for the DBS and because the variables measured in each instrument have been shown in the literature to be highly related to dissertation completion.

Dissertation Barriers Scale (DBS; Green & Kluever, 1997). The DBS consists of 45 items that assess “doctoral students’ and graduates’ concepts of barriers to dissertation completion” (p. 5). However, the authors deleted 6 items due to problems with fit and usefulness, bringing the total number of items for the scale to 39. The DBS was developed to research the dissertation process and identify important barriers to completion. The range of response options for the original measure was from -3 (major hindrance) to +3 (major help), with a choice for “not a concern” and for “not applicable.” Two major differences exist between the instrument that is being used in this study and the original instrument based on the authors’ recommendations. First, the scale was decreased from 45 items to 39 items as mentioned previously. Second, Green and Kluever noted that future use of this instrument should employ a revised response scale because most participants did not utilize the full scale’s range. Thus, for the purposes of this study, the scale was revised to include a 5-point Likert scale ranging from 1 (major hindrance) to 5 (major help). The choice for “not a concern” was changed to neutral (3)

and “not applicable” was eliminated. The revision also made the DBS response choices more similar to the other research measures in the study. Scores for the full scale range from 5 to 195, with lower scores indicating that the participant perceives the items more as a hindrance than a help. Higher scores indicate that the participant perceives the items more as a help than a hindrance. Subscales were similarly scored.

The reliability coefficient for the total scale was .91 (Green & Kluever, 1997). Reliabilities for the factors were .71 (Research Skills), .81 (Personal Organization and Skills), .81 (Time Management and External Pressures, and .82 (Advisor/Committee Functioning). Reliability for the total scale in the present study was .88 with $n = 235$. Construct validity has also been investigated by correlating the DBS to measures of procrastination (Green & Kluever; Johnson et al., 2000) and responsibility (Green & Kluever). Low to moderate negative correlations were found between the factors on the DBS and the subscales of all measures.

Self-Efficacy in Research Measure (SERM; Phillips & Russell, 1994). The SERM consists of 33 items presented on a 10-point Likert scale ranging from no confidence (0) to total confidence (9). The range of the full scale score is 0 to 297, with higher scores representing stronger confidence in research skills and lower scores representing less or no confidence in research skills. The purpose of this instrument is to measure self-efficacy as it relates to research skills and tasks. This measure was included because research self-efficacy has been shown in the literature to be highly related to dissertation completion. The total scale score had an alpha reliability of .96, and significant correlations were found between the SERM and two other measures, a measure of research training environment ($r = .39$) and a measure of research productivity ($r = .45$)

(Phillips & Russell). Although the authors of the SERM also found high reliability for the four subscales, subsequent research done by Forester, Kahn, and Hesson-McInnis (2004) indicated that the full scale score on the SERM is the only reliable measure for this instrument since the factor structure was not verified in their study. Reliability for the total scale in the present study was .95 with $n = 243$.

The Advisor Working Alliance Inventory – Student Version (AWAI-S; Schlosser & Gelso, 2001). The AWAI-S consists of 30 items presented on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). The range of the full scale score is 30 to 150, with higher scores representing stronger advisor working alliance and lower scores representing weaker advisor working alliance. Three factors were found for this instrument including Rapport, Apprenticeship, and Identification-Individuation. The factor reliabilities were as follows: Rapport, $r = .91$, Apprenticeship, $r = .91$, and Identification-Individuation, $r = .77$. The authors found a high correlation between subscales and the total scale score and moderately high correlations between subscales. Also, correlations were found between the AWAI and measures of research self-efficacy, attitudes toward research, and advisor's perceived expertness, attractiveness, and trustworthiness. This measure was included in this study due to its ability to measure advisor/advisee working alliance, which has been shown in the literature to be highly related to dissertation completion. Reliability for the total scale in the present study was .95 with $n = 234$.

Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988). The MSPSS is a 12-item scale with a 7-point Likert response ranging from very strongly disagree (1) to very strongly agree (7). The purpose of this

instrument is to subjectively measure the adequacy of social support from three sources, family, friends, and significant others. The MSPSS was included in this study due to its ability to measure perceived social support, which has been shown in the literature to be highly related to dissertation completion and because of its strong psychometric properties. The measure produces a total scale score and three factor scores including Family, Friends, and Significant Others. The range of the full scale score is 12 to 84, with higher scores representing higher perceived levels of support and lower scores representing lower perceived levels of support. The reliability and test-retest reliability for the total score was .88 and .85 respectively. The factor reliabilities and test-retest reliabilities were .87/.85 (Family), .85/.75 (Friends), and .91/.72 (Significant Others). Reliability for the total scale in the present study was .93 with $n = 240$. The factor reliabilities were as follows: Family, $r = .92$, Friends, $r = .92$, and Significant Others, $r = .98$.

Research with this instrument has sampled populations as diverse as pregnant women (Zimet, Powell, Farley, Werkman, & Berkoff, 1990), adolescents (Canty-Mitchell & Zimet, 2000; Zimet et al.), and pediatric residents (Zimet et al.). Reliability, validity, and factor structure findings from the original study were supported in these studies. Zimet et al. confirmed the subscales and found a total score reliability ranging from .84 to .92 for the varying populations. The subscales also had high reliability ranging from .81 to .98 depending on subscale and population. Dahlem, Zimet, and Walker (1991) surveyed undergraduates as in the original study and found verification for the factor structure and reliability (.91 for total scale). Finally, Canty-Mitchell and Zimet found support for the factor structure and reliability (.93 for total scale).

Discriminant validity was further tested and was supported. For instance, perceived social support was negatively correlated with measures of anxiety (Zimet et al., 1988) and depression (Dahlem et al., 1991; Zimet et al.). Also, a measure of family caring was more strongly correlated with the MSPSS family subscale as compared with the correlations of the MSPSS subscales of friends and significant others (Canty-Mitchell & Zimet, 2000). Finally, Zimet et al. (1990) found that married pediatric residents reported a significantly greater amount of support from significant other than non-married residents.

Procedures

A description of the study was sent via email to the training directors of APA-approved doctoral psychology programs and posted to the listserve of the Council of Counseling Psychology Training Programs (CCPTP). Training directors were asked to disseminate this email to students in psychology doctoral programs that require a dissertation who have either passed competency exams and remain students or who have graduated within the past two years. The emails included a consent form and the website link for ease of participant involvement

Once the participant read the consent form, they were able to click on the link to the survey if they chose to participate. They were then directed to the Web page containing the demographic questionnaire and the four additional instruments. Due to the web-based design of the survey, counterbalancing of the instruments was not possible. Each participant completed the DBS, the SERM, the AWAI, and the MSPSS in that order. When they completed all instruments, participants were thanked for their

participation, given contact information for the principal researcher, and told how to enter the raffle prize drawing.

Research Questions

The research questions to be addressed in this study were (a) What is the factor structure of the DBS?; (b) What are the psychometric properties (internal consistency reliability and construct validity) of this instrument?; (c) Does a linear combination of the total scores on the SERM, AWAI-S, and MSPSS predict the component scores of the DBS?; and (d) What demographic variables predict DBS total scores?

The hypothesis for the first research question based on previous literature was that a 4-factor solution would be indicated, similar to the one found by the original authors, i.e., Advisor/Committee Functioning, Personal Organization and Skills, Time Management and External Pressures, and Research Skills. However, because this sample was different from that of the original study (psychology doctoral students vs. college of education graduate students), the factors may be unique to this new sample.

The hypotheses for the second research question included the following sub-hypotheses: (a) Reliability for the DBS full scale and the subscales would be high, (b) The AWAI-S would be significantly correlated with the Advisor/Committee functioning subscale of the DBS, (c) The SERM would be correlated significantly with the Research Skills subscale of the DBS, and (d) Scores on the MSPSS would be significantly correlated with the DBS total score.

For the third and fourth research questions, previous literature would indicate that scores on the SERM, AWAI-S, and MSPSS would predict the DBS component scores.

Finally, demographic variables have been shown to be related to dissertation completion and it was hypothesized that they would predict DBS scores.

Results

To investigate the underlying structure of the 39 DBS items, a principal components analysis was conducted. Initially, ten factors with eigenvalues greater than 1.0 were extracted. However, examination of the scree plot revealed that a 5-factor solution was more appropriate. Both oblique and orthogonal rotations were examined and, given minimal correlations among the factors, an orthogonal rotation was determined to be most appropriate. The structure coefficients, eigenvalues, communalities, sums of squared loadings after rotation, and percentage of variance accounted for are presented in Table 1. The five factors accounted for 47.97% of the total variance. The composition of factors in this study differed considerably from that reported by Green and Kleuver (1997). The first component was labeled Relationship with Dissertation Director, Advisor and Committee, and seemed to tap the working alliance between the dissertation student and the faculty involved in the process of dissertation completion. This component differed from Green and Kluever's Advisor/Committee Functioning factor by only one item. The second component was labeled Task Management and appeared to involve a personal ability to manage the overall skills related to task progress and completion. This component differed from Green and Kleuver's Personal Organization and Skills by two items. The third component was labeled Skill Deficits. It appeared to represent deficiencies related to research skills, including exposure to prior research and data analysis. The fourth component was labeled Competing Demands and seemed to tap issues related to family and job related pressures. Finally, the fifth component was labeled Identifying a Topic

and appeared to entail the student's ability to adequately identify and narrow the dissertation topic.

The hypotheses for the second research question included several sub-hypotheses, including that the reliability for the DBS full scale and the subscales would be high. Since internal consistency reliability for the total scale was .88 and for the five components were .84, .85, .72, .60, and .58, respectively, this sub-hypothesis was partially supported. Low reliabilities for the fourth and fifth components were likely related to the few items comprising those components.

The second sub-hypothesis predicted that the AWAI-S would be significantly correlated with the Advisor/Committee Functioning subscale of the DBS. This hypothesis was supported as the full scale score of the AWAI-S and the three subscales including Rapport, Apprenticeship, and Identification-Individuation were significantly correlated with Component 1 of the DBS labeled Relationship with the Dissertation Director, Advisor, and Committee ($r = .69, .59, .66, \text{ and } .54$, respectively, $p < .01$).

The third and fourth sub-hypotheses predicted that the SERM would be correlated significantly with the Research Skills subscale of the DBS and the MSPSS would be significantly correlated with the DBS total score. Since the components found in this study differ significantly from those found by the original authors, it was impossible to make a direct comparison. However, the SERM was significantly correlated with the DBS total score and components 2, 3, 4, and 5 ($r = .35, .35, .35, .19, \text{ and } .26$, respectively, $p < .01$). Finally, the MSPSS was significantly correlated with the DBS total score ($r = .29, p < .01$). It is important to note, however, that these correlations fell within the low correlation range despite their significance.

For the third research question, which predicted that the SERM, AWAI-S, and MSPSS would predict the components of the DBS, multiple regressions were conducted using a linear combination of the total scores from the SERM, the AWAI-S, and the MSPSS to predict each of the DBS component scores. Tables 2-6 present the results of these analyses. The regression model predicting Component 1 (Relationship with Dissertation Director, Advisor, and Committee) was significant, $F(3, 202) = 57.91$, $p < .0001$. It accounted for 46% of the variance in the Component 1. However, only the AWAI-S was a significant predictor in the model. The regression model predicting Component 2 (Task Management) was significant at the $p < .001$ level, with an $F(3, 209) = 20.56$. It accounted for 23% of the variance in Component 2 and all three predictors were significant. The regression model predicting Component 3 (Skills Deficits) was significant at the $p < .0001$ level with an $F(3, 206) = 10.98$. It accounted for 14% of the variance in the Component 3, but only the SERM and MSPSS proved to be significant predictors in the model. The regression model predicting Component 4 (Competing Demands) was significant at the $p < .003$ level, with an $F(3, 205) = 4.75$. It accounted for 7% of the variance in Component 4, but again only the SERM and MSPSS proved to be significant predictors in this model. Finally, the regression model for predicting Component 5 (Identifying a Topic) was significant at the $p < .005$ level, with an $F(3, 208) = 4.37$. It accounted for 6% of the variance in Component 5. Only the SERM was a significant predictor in this model. See Tables 2-6 for Betas and significance levels for all models. Overall, these results support the hypotheses.

Lastly, the hypothesis for the fourth research question was that select demographic variables would predict the DBS total score. The following demographic

variables were dummy coded and used in a multiple regression to predict DBS total scores: program, gender, age, race/ethnicity, marital status, dependent status, employment status, financial support, and geographic proximity. Table 7 presents the results of this analysis. The overall model accounted for 13.3% of the variance in the DBS total score, $F(19, 210) = 1.69, p < .04$. However, only two of the predictors were significant in the model: being employed full time and being employed as primary form of financial support. Betas and significance levels are reported in Table 7. These results partially supported the predicted hypothesis.

Discussion

Despite the fact that a 4-factor solution for the DBS was indicated in the original study by Green and Kleuver (1997), the present study revealed that a 5-factor solution appeared more appropriate. The first two components of the 5-factor solution appeared to be quite similar to Green and Kleuver's factors of Advisor/Committee Functioning and Personal Organization and Skills, while the remaining three components were unique and appeared to tap into the areas of skills deficits, competing demands, and identifying a dissertation topic. While some parallels can be drawn between the structures reported in these two studies, it is necessary to point out that the number of factors and composition of factors was not consistent across the samples of the two studies, i.e., items comprising the first two factors differed slightly, and factors 3 and 4 from the original study were considerably different from components 3, 4, and 5 in the present study (Appendix G). Clearly, further examination of the underlying structure of the DBS is warranted. However, because this sample is different from the original study's participants (psychology doctoral students vs. college of education graduate students), the difference in factor structure is not surprising.

It is important to note that out of the 319 participants who completed the demographic information, only 235 completed the entire DBS. There are several reasons that participants may have chosen not to complete the DBS. First, one of the DBS authors noted in an email that the original rating scale was an attempt at "direction plus intensity approach to assessment" and noted further that this approach "didn't work very well" and that she would go with a "rating scale if I were to do it again" (K. E. Green, personal communication, March 2, 2005). Second, the bi-directional rating scale in

combination with the negative wording of some of the items may have proved difficult for some of the participants. For example, item 11 is worded “difficulty with time management.” It seems unlikely that there would be a time that participants would label this item as a “help.” Third, several emails received from participants noted the lack of a “Not applicable” response caused them to answer neutral to many items. They noted that “I answered most of the (DBS) items ‘neutral,’ because they didn’t apply.” “For example, I have never had a problem with a committee member or my major professor. So to the statement, ‘conflict with dissertation director,’ I put down neutral” (study participants, personal communications, March, 2005). It appeared from the raw data that participants with significant missing data either skipped the DBS as a whole or began the instrument but quit after answering the first few questions. This may have been because of the confusion and frustration with the wording of the items and rating scale.

While Cronbach’s alphas for the DBS full scale and components 1, 2, and 3 were high, reliability coefficients for components 4 and 5 were only in the moderate range. This may reflect the differences between the participants in the present study and the original study. It may also suggest the need to develop and test additional items that tap into the constructs reflecting the components of Competing Demands and Identifying a Dissertation Topic.

As predicted, the AWAI-S was significantly correlated with Component 1 (Advisor/Advisee Relationship). The SERM was significantly correlated with the DBS total score and all but the second component (Task Management). Finally, the MSPSS total score and factor scores were significantly correlated with the DBS total score.

These findings are of note in that they provide additional evidence of the construct validity of the DBS.

Finally, results of a multiple regression analysis indicated that DBS total scores were predicted by selected demographic variables. It appears however, that only employment as a financial resource and employment full-time contributed significantly to the demographic variables' model. This conclusion is surprising given previous findings in this area indicating that demographic variables such as gender, age, marital status, dependent status, and geographic proximity have an effect on dissertation completion. It is possible that the uniqueness of this sample, doctoral psychology students versus college of education graduates and/or graduate students in other programs, could account for these differences. Also, this finding may highlight the importance of employment and financial support over other demographic variables. This conclusion was made in previous research by Abedi and Benkin (1987) who concluded that the source of financial support predicted more variance in time to degree than postdoctoral plans, number of dependents, sex, and field of study.

Regression analyses also indicated that the DBS component scores were predicted by scores on the SERM, AWAI-S, and the MSPSS. However, there was some variation in significant predictors for each model. For instance, the AWAI-S was the only significant predictor in the model for Component 1, which makes sense given that this component captures the relationship between the student and the dissertation director, advisor and committee and the AWAI-S measures a similar construct. Self-efficacy in research and social support may not be able to predict this relationship as well as a measure directed at the advisor-advisee relationship. The SERM and the MSPSS were

the only significant predictors in the model for Components 3 and 4, while the SERM was the only significant predictor in the model for Component 5. Again, these results make sense when looking at what kind of content each component seemed to tap. Component 3 (Skills Deficits) and Component 4 (Competing Demands) were predicted by measures that tapped self-efficacy in research and social support. In addition, the self-efficacy in research measure predicted Component 5 (Identifying a Topic). It makes sense that instruments designed to measure research self-efficacy and social support would be predictive of this component. The regression model predicting Component 2 (Task Management) was the only model in which all three predictors were significant. This may signify the complexity of task management as it relates to completion of the dissertation in that this component is predicted by several indicators, i.e., advisor-advisee relationship, self-efficacy in research, and social support.

Limitations of the Study

There are some important limitations of this study that should be noted. First, the sample utilized was primarily composed of Caucasian/White female doctoral college students. Findings reported are clearly limited by the characteristics of this sample. A broader range of ethnic backgrounds and gender would improve the generalizability of these findings.

Additionally, self-report measures were utilized in this study. The validity of the findings may be called into question with the use of self-report measures due to the fact that it is difficult to know whether or not subjects are answering truthfully or based on some unknown expectation. Since a social desirability measure was not utilized in this

study, it is difficult to determine whether subjects were answering in a socially desirable manner.

Finally, self-selection was used to gain subject participation. Results reported may be a reflection of a group of doctoral students who are uniquely different from those students who chose not to participate in the study.

Limitations of the DBS. There appear to be two main limitations in the use of the DBS. First, the bi-directional DBS rating scale may be confusing for participants and may benefit from rescaling. For example, it might be more useful to use a simple Likert scale that reflects one direction of the current scale. Participants could rate an item based on how significant a hindrance they believe each item to be with 1 representing “not a hindrance” and 5 representing “major hindrance.” Also, it may be useful to consider a “not applicable” option for participants who may feel a certain item is not representative of their experiences. Second, the positive and negative wording of items seems to increase the difficulty of answering DBS items. Deleting positive and negative wording in the items may make items easier to answer. For example, item 1 is worded “loss of free time to spend with family/friends” which could be reworded to say “free time to spend with family/friends.” Other examples would be item 11 which is worded “lack of structure of dissertation process,” item 12 which is worded “inadequate prior exposure to research,” and item 14 which is worded “obstructive committee member.” These could be reworded to say “structure of the dissertation process, prior exposure to research, and committee member availability/support.”

Conclusions and Implications for Doctoral Psychology Training Program

The findings of this study indicate that the factor structure of the DBS may not be consistent across groups, which should be studied in further research. However, there is some evidence of reliability and validity for the constructs represented in the DBS. Also, this study indicates DBS component scores were predicted by total scores on the SERM, AWAI-S, and MSPSS and that the DBS total score was predicted by select demographic variables. These findings are significant because they point to the relationship between specific constructs such as the advisor-advisee relationship, self-efficacy in research, and social support as well as specific demographics in the ability to predict dissertation completion.

These findings have significant implications for doctoral training programs. First, understanding the links between self-efficacy in research, advisor/advisee relationship and social support for completion of the dissertation are important for all programs. Also, understanding the links between demographic variables and dissertation completion can be vital to supporting individual students throughout the process of completing their degrees. Advisors and department chairs can use this information to plan coursework, review advisor/advisee relationship characteristics, and highlight practical considerations in the personal lives of students. Second, an instrument such as the DBS has the potential to educate faculty and students on the barriers to dissertation completion by preparing both parties for potential obstacles related to the dissertation process thus minimizing their impact as much as possible. However, in order for the DBS to serve as a useful tool for faculty and students, further research examining the original items and the development and testing of new items is warranted.

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Table 1

Principal Component Factor Analysis of DBS Items

Item	Component 1	Component 2	Component 3	Component 4	Component 5	h^2
1				.43		.20
2		.13		.36		.16
3	.76					.58
4	.66		.16		-.13	.48
5		.38	.22	.22		.24
6	.43		.23	.11		.38
7	.66				.17	.48
8			.13		.83	.71
9		.18	.25		.64	.52
10	.44	.32	.32		.21	.44
11		.43	.63	.19		.62
12	.13		.74	-.26	.10	.64
13			.63	-.18	.31	.54
14	.61	-.23	.15	.18	.11	.49
15	.83					.69
16		.20	.39	.26	.24	.33
17	.12	.14			.36	.18
18				.57	.31	.44
19	-.12	.28	.18	.55	.28	.50
20	.18	.20	.25	.60		.50
21	.57		.11	.15		.36
22	.67	-.14		.25		.55
23			.34	.33	.34	.34
24	.16			.60	-.18	.42
25	.20	.31	.62	.26		.60
26	.19	.27	.38	.33	-.22	.41
27	.65	.42	-.23	-.17		.68
28	.62	.36	-.12	-.14		.55
29	.67	.31	-.30	-.17		.67
30		.70	.34			.61
31		.48		.26		.31
32		.57		.14	.26	.42
33		.69	.32			.59
34		.74				.57
35		.61		.17	.10	.42
36	.50	.55	-.18			.58
37	.18	.51			.41	.47
38		.70	.13		.17	.53
39		.67		.16	.11	.50

Table 1 continued

Principal Component Factor Analysis of DBS Items

Item	Component 1	Component 2	Component 3	Component 4	Component 5
Initial Eigenvalues	7.48	4.65	2.74	1.94	1.90
Sums of Squared					
Loadings After					
Rotation	5.42	5.30	3.07	2.58	2.34
% of Total Variance	13.90	13.60	7.88	6.61	5.99

Table 2

Regression of the SERM, AWAI-S, and MSPSS and DBS Component 1

Variable	<i>B</i>	<i>t</i> value	<i>p</i>
SERM	-.08	-1.47	.14
AWAI-S	.69	13.05	.0001
MSPSS	.01	.14	.89

Table 3

Regression of the SERM, AWAI-S, and MSPSS and DBS Component 2

Variable	<i>B</i>	<i>t</i> value	<i>p</i>
SERM	.26	4.16	.0001
AWAI-S	.16	2.51	.01
MSPSS	.27	4.38	.0001

Table 4

Regression of the SERM, AWAI-S, and MSPSS and DBS Component 3

Variable	<i>B</i>	<i>t</i> value	<i>p</i>
SERM	3.07	4.56	.0001
AWAI-S	-.03	-.47	.64
MSPSS	.16	2.47	.01

Table 5

Regression of the SERM, AWAI-S, and MSPSS and DBS Component 4

Variable	<i>B</i>	<i>t</i> value	<i>p</i>
SERM	.16	2.33	.02
AWAI-S	-.09	-1.29	.20
MSPSS	.17	2.42	.02

Table 6

Regression of the SERM, AWAI-S, and MSPSS and DBS Component 5

Variable	<i>B</i>	<i>t</i> value	<i>p</i>
SERM	.22	3.14	.002
AWAI-S	-.01	-.09	.93
MSPSS	.07	1.02	.31

Table 7

Regression of Demographic Variables and the DBS Total Score

Variable	<i>B</i>	<i>t</i> value	<i>p</i>
Counseling Psych	.07	.87	.39
School Psych	.08	1.07	.29
Other program	-.02	-.33	.74
Age 30-39	-.14	-1.84	.07
Age 40-49	.07	.84	.40
Age 50-59	-.07	-.10	.32
Gender Male	.08	1.14	.26
African American	.03	.38	.71
Hispanic	-.01	-.09	.93
Asian	.03	.47	.64
Other ethnicity	.03	.50	.62
Married	.10	1.43	.16
Have a child	-.08	-1.02	.31
Over one hour	.06	.80	.42
Part-time	.16	1.42	.16
Full-time	.33	2.84	.005
Personal finances	-.05	-.71	.48
Family finances	-.004	-.06	.95
Employment	-.16	-2.22	.03

Appendix A

DBS

Were each of the following concerns to you or difficulties you encountered in completing your dissertation? Please use the following scale to respond. It was a:

	Major hindrance		Neutral		Major Help
	1	2	3	4	5
	<u>Hindrance</u>				<u>Help</u>
1. loss of free time to spend with family/friends	1	2	3	4	5
2. library hours	1	2	3	4	5
3. conflict with dissertation director	1	2	3	4	5
4. dissertation director's perfectionism	1	2	3	4	5
5. my own perfectionism	1	2	3	4	5
6. my lack of interest in dissertation topic	1	2	3	4	5
7. faculty's lack of interest in my topic	1	2	3	4	5
8. choosing the dissertation topic	1	2	3	4	5
9. narrowing the dissertation topic	1	2	3	4	5
10. lack of structure of dissertation process	1	2	3	4	5
11. difficulty with time management	1	2	3	4	5
12. inadequate prior exposure to research	1	2	3	4	5
13. inadequate prior exposure with data analysis	1	2	3	4	5
14. obstructive committee member	1	2	3	4	5
15. lack of support from dissertation director	1	2	3	4	5
16. doing the literature review	1	2	3	4	5
17. collecting the data	1	2	3	4	5
18. job-related pressures/demands	1	2	3	4	5
19. setting aside time for the dissertation	1	2	3	4	5
20. setting aside a space/room for dissertation	1	2	3	4	5

	Major hindrance		Neutral		Major Help	
	1	2	3	4	5	
	<u>Hindrance</u>				<u>Help</u>	
21. getting drafts back from committee members	1	2	3	4	5	
22. lack of constructive/concrete feedback from committee	1	2	3	4	5	
23. delay in starting dissertation after comps	1	2	3	4	5	
24. conflict with role as home/family head	1	2	3	4	5	
25. inability to plan ahead	1	2	3	4	5	
26. isolation from other students	1	2	3	4	5	
27. advisor's support and encouragement	1	2	3	4	5	
28. prompt return of drafts from advisor	1	2	3	4	5	
29. collegial relationship with advisor	1	2	3	4	5	
30. self-direction	1	2	3	4	5	
31. support of family, friends	1	2	3	4	5	
32. willingness to take academic risks	1	2	3	4	5	
33. organizational skills	1	2	3	4	5	
34. approaching dissertation in sections rather than as one complete task	1	2	3	4	5	
35. ability to live with ambiguity	1	2	3	4	5	
36. advisor's expectation that you would finish	1	2	3	4	5	
37. love of the dissertation topic	1	2	3	4	5	
38. persistence	1	2	3	4	5	
39. sticking to a schedule	1	2	3	4	5	

Appendix B

SERM

The following items are tasks related to research. Please indicate your degree of confidence in your ability to successfully accomplish each of the following tasks on a scale from 0-9 with 0 representing no confidence and 9 representing total confidence.

	0-----1-----2-----3-----4-----5-----6-----7-----8-----9	
	no	total
	confidence	confidence
1.	Selecting a suitable topic for study	_____
2.	Knowing which statistics to use	_____
3.	Getting an adequate number of subjects	_____
4.	Writing a research presentation for a conference	_____
5.	Writing the method and results sections for a research paper for publication.	_____
6.	Manipulating data to get it onto a computer system	_____
7.	Writing a discussion section for a thesis or dissertation	_____
8.	Keeping records during a research project	_____
9.	Collecting data	_____
10.	Designing an experiment using non-traditional methods e.g., ethnographic, cybernetic, phenomenological approaches	_____
11.	Designing an experiment using traditional methods e.g., experimental, quasi-experimental designs	_____
12.	Making time for research	_____
13.	Writing the introduction and literature review for a dissertation	_____
14.	Reviewing the literature in an area of research interest	_____

	0-----1-----2-----3-----4-----5-----6-----7-----8-----9	
	no	total
	confidence	confidence
15.	Writing the introduction and discussion sections for a research paper for publication	_____
16.	Contacting researchers currently working in an area of research interest	_____
17.	Avoiding the violation of statistical assumptions	_____
18.	Writing the method and results sections of a dissertation	_____
19.	Using simple statistics e.g., t-test, anova, correlation, etc.	_____
20.	Writing the introduction and literature review for a thesis	_____
21.	Controlling for threats to validity	_____
22.	Formulating hypotheses	_____
23.	Writing the method and results sections of a thesis	_____
24.	Utilizing resources for needed help	_____
25.	Understanding computer printouts	_____
26.	Defending a thesis or dissertation	_____
27.	Using multivariate statistics e.g., multiple regression, factor analysis, etc.	_____
28.	Using statistical packages e.g., SPSS-X, SAS, etc.	_____
29.	Selecting a sample of subjects from a given population	_____
30.	Selecting reliable and valid instruments	_____
31.	Writing statistical computer programs	_____
32.	Getting money to help pay for research	_____
33.	Operationalizing variables of interest	_____

Appendix C

(AWAI-S)

These 30 items pertain to your perceptions about your relationship with your advisor. For the purposes of this study, the term advisor is referring to the faculty member that has the greatest responsibility for helping guide you through your graduate program (e.g. advisor, major professor, committee chair, dissertation chair). Please respond to the items using the following scale:

	Strongly Disagree		Neutral		Strongly Agree
1. I get the feeling that my advisor does <u>not</u> like me very much.	1	2	3	4	5
2. My advisor introduces me to professional activities (E.g. conferences, submitting articles for journal publication)	1	2	3	4	5
3. I do <u>not</u> want to be like my advisor.	1	2	3	4	5
4. My advisor welcomes my input into our discussions.	1	2	3	4	5
5. My advisor helps me conduct my work within a plan.	1	2	3	4	5
6. I tend to see things differently from my advisor.	1	2	3	4	5
7. My advisor does <u>not</u> encourage my input into our discussions.	1	2	3	4	5
8. My advisor has invited me to be a responsible collaborator in his/her own work.	1	2	3	4	5
9. I do <u>not</u> want to feel similar to my advisor in the process of conducting work.	1	2	3	4	5
10. My advisor is <u>not</u> kind when commenting about my work.	1	2	3	4	5
11. My advisor helps me establish a timetable for the tasks of my graduate training.	1	2	3	4	5
12. My advisor and I have different interests.	1	2	3	4	5
13. I do <u>not</u> feel respected by my advisor in our work together.	1	2	3	4	5
14. My advisor is available when I need her/him.	1	2	3	4	5
15. I feel like my advisor expects too much from me.	1	2	3	4	5
16. My advisor offers me encouragement for my accomplishments.	1	2	3	4	5
17. Meetings with my advisor are unproductive.	1	2	3	4	5
18. I do <u>not</u> think that my advisor believes in me.	1	2	3	4	5
19. My advisor facilitates my professional development through networking.	1	2	3	4	5
20. My advisor takes my ideas seriously.	1	2	3	4	5
21. My advisor does <u>not</u> help me stay on track in our meetings.	1	2	3	4	5
22. I do <u>not</u> think that my advisor has my best interests in mind.	1	2	3	4	5
23. I learn from my advisor by watching her/him.	1	2	3	4	5
24. I feel uncomfortable working with my advisor.	1	2	3	4	5
25. I am an apprentice of my advisor.	1	2	3	4	5
26. I am often intellectually "lost" during my meetings with my advisor.	1	2	3	4	5
27. I consistently implement suggestions made by my advisor.	1	2	3	4	5
28. My advisor strives to make program requirements as rewarding as possible.	1	2	3	4	5
29. My advisor does <u>not</u> educate me about the process of graduate school.	1	2	3	4	5
30. My advisor helps me recognize areas where I can improve.	1	2	3	4	5

Thank you very much for your time!

Appendix D

MSPSS

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

Very Strongly Disagree				Neutral				Very
Strongly Agree								
1	2	3		4	5	6		7
1. There is a special person who is around when I am in need.	1	2	3	4	5	6	7	
2. There is a special person with whom I can share my joys and sorrow.								
						1	2	3
						4	5	6
3. My family really tries to help me.						7		
4. I get the emotional help and support I need from my family.	1	2	3	4	5	6	7	
5. I have a special person who is a real source of comfort to me.	1	2	3	4	5	6	7	
6. My friends really try to help me.	1	2	3	4	5	6	7	
7. I can count on my friends when things go wrong.	1	2	3	4	5	6	7	
8. I can talk about my problems with my family.	1	2	3	4	5	6	7	
9. I have friends with whom I can share my joys and sorrows.	1	2	3	4	5	6	7	
10. There is special persona in my life who cares about my feelings.								
						1	2	3
						4	5	6
11. My family is willing to help me make decisions.						7		
12. I can talk about my problems with my friends.	1	2	3	4	5	6	7	

Appendix E

Demographic Questionnaire

Please complete the following questions.

1. What APA-approved psychology doctoral program are you enrolled in or have you completed?
Clinical psychology
Counseling Psychology
School Psychology
Other: _____ (specify)
2. Does/did your Ph.D. program require you to complete a dissertation?
Yes
No
3. Gender:
Male
Female
4. Age
20-29
30-39
40-49
50-59
60+
5. Race/Ethnicity:
Caucasian/White
African-American/Black
Hispanic/Latino/Mexican-American
American Indian
Asian-American/Pacific Islander
Other: _____ (specify)
6. Marital status:
Single, Separated/Divorced, or Widowed
Married or Committed relationship
7. Do you have children?
Yes
No
8. What is your status in the doctoral program in which you are/were enrolled?
In the process of completing coursework

Completed comprehensive exams
Completed internship
Completed dissertation/graduated

9. Was your proposal required to be completed prior to applying for internship?
Yes
No
10. Was your proposal required to be completed prior to attending internship?
Yes
No
11. What is your career goal?
University faculty
Practitioner
Researcher
Other: _____ (please specify)
12. What is your employment status?
Employed full-time
Employed part-time
Unemployed
13. What primary form of financial support do you/did you receive while completing your dissertation?
Grants, Loans, Scholarships
Personal finances
Family finances
Employment
14. How close geographically are you/were you to the University where you attended while completing your dissertation?
Within one hour driving distance
Over one hour driving distance
15. What month/year did you begin your doctoral coursework? _____
16. What month/year do you plan to complete/did you complete your dissertation?

Appendix F

INFORMED CONSENT FORM FOR RESEARCH BEING CONDUCTED UNDER THE AUSPICES OF THE UNIVERSITY OF OKLAHOMA-NORMAN CAMPUS

March 2005

Dear Doctoral Student:

I am a graduate student under the direction of Dr. Denise Beesley in the Educational Psychology Department at The University of Oklahoma-Norman Campus. I invite you to participate in a research study being conducted under the auspices of the University of Oklahoma-Norman Campus entitled "Factor Analysis of the Dissertation Barriers Scale: Evidence for Dimensionality and Construct Validity." The purpose of this study is to survey psychology doctoral students who are required to write a dissertation as part of their degree in order to determine whether or not the Dissertation Barriers Scale is a useful measure for looking at what supports and/or blocks dissertation completion. Because of the nature of this study, please consider filling out the survey only if you have passed your competency exams and remain a student or if you are within two years of completing your degree.

Your participation will involve completing a web survey and should only take about 15 to 20 minutes. Your involvement in the study is voluntary, you may choose not to participate or to stop at any time, and there will be no penalty should you decide not to participate or complete the survey. This survey is anonymous, and there are no foreseeable risks associated with your involvement in this project beyond those present in routine daily life. The results of this study may be published, but your name will not be linked to responses in publications that are released from the project. In fact, the published results will be presented in summary form only. All information you provide will remain strictly confidential.

The findings from this project will provide valuable information on ways to support doctoral students in dissertation completion with no cost to you other than the time it takes to complete the survey.

If you have any questions about this research project, please feel free to call me at (918) 284-2853 or Dr. Beesley at (405) 325-5974 or e-mail me at kristin.e.ober-1@ou.edu. Questions about your rights as a research participant or concerns about the project should be directed to the Institutional Review Board at The University of Oklahoma-Norman Campus at (405) 325-8110 or irb@ou.edu

By clicking on the website link below, you will be agreeing to participate in the above described project and you will be routed to the web survey. If you choose to participate, you will be eligible to enter a raffle for a \$50 gift card at the end of the survey. If you choose not to participate, please click out of your browser now or click on the "back" button.

<http://www.surveymonkey.com/s.asp?u=36640855524>

Thank you for your consideration!

Sincerely,
Kristin Ober, ABD

Appendix G

Items Contributing to DBS Factors

Green and Kleuver (1997)

Factor 1 (Advisor/Committee Functioning) – Items 3, 4, 6, 7, 14, 15, 21, 22, 27, 28, 29

Factor 2 (Personal Organization and Skills) – Items 30, 31, 32, 33, 34, 35, 37, 38, 39

Factor 3 (Time Management and External Pressures) – Items 1, 10, 11, 12, 13, 18, 19, 20, 23, 24, 25, 26

Factor 4 (Research Skills) – Items 2, 5, 8, 9, 16, 17, 36

DBS Items Contributing to Components in Current Study

Component 1 (Relationship with Dissertation Director, Advisor and Committee) – Items 3, 4, 6, 7, 10, 14, 15, 21, 22, 27, 28, 29

Component 2 (Task Management) – Items 5, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39

Component 3 (Skill Deficits) – Items 11, 12, 13, 16, 25, 26

Component 4 (Competing Demands) – Items 1, 2, 18, 19, 20, 24

Component 5 (Identifying a Topic) – Items 8, 9, 17, 23

Appendix H
Proposal Submitted to the Graduate College

Factor Analysis of the Dissertation Barriers Scale:
Evidence for Dimensionality and Construct Validity
Dissertation Prospectus
SUBMITTED TO THE GRADUATE FACULTY
In partial fulfillment of the requirement for the
Degree of Doctor of Philosophy

Kristin E. Ober
University of Oklahoma

2005

Chapter 1

Introduction

Background of the Problem

Completion rates for doctoral students have decreased over the last four decades while the time it takes to earn a doctorate has increased over the same time period (Bowen and Rudenstine, 1992). In this seminal research, they found that only half of the students entering graduate study complete their degrees. The time it takes to earn a degree has also increased significantly, but varies across degree programs. The authors noted that the time taken to earn a degree had its most significant increases in the humanities and social sciences and that there were systematic differences across fields of study, with higher completion rates in science fields. These negative changes in completion rates and time to degree are problematic for many reasons, including the personal and financial sacrifice of the student and their families, the impact of dropping out on faculty and the graduate program, and the negative influence on the university reputation.

Bowen and Rudenstine (1992) suggested that only 80% of students who achieve All But Dissertation Status (ABD) finish their dissertations and graduate. Therefore, a significant number of students who drop out of doctoral study do so at the end of their program when faced with the dissertation project. Other authors have argued that as many as half of the students achieving ABD status will never finish (Sternberg, 1981). These are extremely alarming rates considering the financial, psychological, and programmatic investment in individual graduate students.

This leads us to ponder why the dissertation process leads to so many dropouts from doctoral work. Sternberg (1981) posited several reasons why the dissertation process can be so devastating. He identified inadequate support systems, lack of graduate student community, lack of faculty recognition for dissertation advising, the lack of preparedness of the Ph.D. candidate to complete the dissertation project, and the change in expectations from coursework to dissertation placed on the ABD student as reasons why many students fail to complete their dissertations even after completing all other requirements. Therefore, it should not be surprising that completion rates for doctoral students across majors requiring dissertations have been calculated as low as 50% (Sternberg), with the dissertation itself accounting for 20% of doctoral program attrition in education (Bowen & Rudenstine, 1992). These challenges certainly describe how a student may become ABD, but also lead to questions regarding variables that may contribute to low completion rates among ABD students.

Statement of the Problem

The dissertation is a long and tedious process that can be hindered by many variables. Demographic and internal and external variables have been alluded to in theory and have been empirically shown to be related to time to degree, degree completion and dissertation completion. However, no quantitative measure of these variables had been represented in the literature until the creation of the Dissertation Barriers Scale (Green & Kluever, 1997). This measure may be an important addition to the literature in light of the significance of doctoral degree completion, the theories of doctoral degree retention, and the literature on barriers and supportive variables to

dissertation completion. However, the Dissertation Barriers Scale is a relatively new measure that has not been widely used in the literature.

The Dissertation Barriers Scale (DBS) seeks to quantify several variables related to delay in dissertation completion and may prove to be an important measure for understanding ABD status. In addition, it can be used to compare graduates and ABD students to determine how to best support students in the dissertation completion process. Because there has only been one unpublished study on the DBS to date, the purpose of this study is to investigate the psychometric properties of the DBS such as reliability, validity, and factor structure on a sample of psychology doctoral students.

Significance of the Study

The DBS may be used to help researchers and university personnel understand the variables that hinder a student from completing the dissertation, which may help prevent individual emotional distress, faculty and program waste of energy and time, and the negative impact on the university system that ABD status can have. Items from the DBS may have practical implications for university administrators and dissertation advisors in identifying specific tasks that an individual may be struggling with while they work to complete their dissertation. This study attempts to explore the psychometric properties of the DBS, including its factor structure, reliability, and construct validity with a sample of doctoral students from various APA accredited psychology programs.

Chapter 2

Review of the Literature

Bowen and Rudenstine (1992) completed perhaps the most comprehensive study since Berelson's (1960) research in the area of graduate completion rates and time to degree (defined as number of years between the awarding of the BA and the awarding of the Ph.D.). Their principal findings indicated that only 50% of incoming graduate students completed their degrees, that completion rates have decreased since the mid-1960s, and that time to degree has increased. They noted that time to degree had its most significant increases in the humanities and social sciences and that there were systematic differences across fields of study with higher completion rates in science fields.

These negative changes in completion rates and time to degree are problematic for many reasons. First and foremost is the time, money, emotional energy, and sacrifices made by the individual student and his or her family to engage in graduate study. To complete all required coursework and general exams but to fail to complete the dissertation and graduate can be expensive and painful to the student and his or her family (Green & Kluever, 1997). Sternberg (1981) noted that "not to finish is practically to guarantee a years-long, if not lifelong, mood of a flawed or somehow incompleting life, where the ABD is constantly explaining/rationalizing to others...and to himself just why he didn't finish" (p. 4). Second, students who remain ABD are a cause for concern for university faculty and program status, especially for those faculty who have invested time and energy in students who inevitably do not complete their degree (Green & Kluever). Sanchez-Hucles and Cash (1992) agreed but indicated that failure to complete the doctorate and/or excessive delay in completion is troubling for both faculty and students.

Third, a high number of non-completers may be deleterious to the reputation of the university itself (Green & Kluever). Last, concerns have been raised regarding the number of professors and faculty who will be necessary to teach in institutions across the United States compared to the number of completed Ph.D. students. For instance, Bowen and Rudenstine (1992) stated that

We believe that many American colleges and universities are likely to face serious staffing problems by the end of the 1990's. Significant imbalances between demand and supply could result from a combination of expected retirement patterns, the demography of the college-age population, and declines over recent decades in the number of Ph.D.s awarded to U.S. residents. (p. 2)

Other research has supported this finding and reiterated that “shortages in doctoral-level scholars in critical fields have serious effects on our national capacity to sustain undergraduate and graduate education” (p. 30, National Commission on Financial Assistance, 1983). Finally, our society is based on the research and innovative thinking of graduate students. The National Commission on Student Financial Assistance declared graduate education and research as the “bedrock of every important area of our national life” (p. 16) and drew examples such as the economy, diplomacy, defense, security, and American life to illustrate the point.

ABD was defined by Bowen and Rudenstine in 1992 as “students leaving graduate study without receiving a Ph.D. after finishing all requirements except the dissertation” (p. 427). These authors subsequently found that “students who had achieved ABD status had roughly an 80 percent chance of finishing a dissertation and

receiving a Ph.D.” (p. 112). Sanchez-Hucles and Cash (1992) found that 24.3% of students who were eligible to complete their doctorate remained ABD after 2 years. Sternberg (1981) claimed that “half of all ABDs writing full-fledged dissertations never finish, although the percentages vary considerably from discipline to discipline” (p. 26). These are extremely alarming rates considering the financial, psychological and programmatic problems that ABD status can cause (see above).

Why does the dissertation process lead to so many dropouts from doctoral work? Moore (1985) characterized the dissertation process in a way that may shed some light on this problem.

Of all the sacred cows of academia, The Ph.D. dissertation is the most holy. The idea that to attain academia’s crown jewel you must make an original contribution to knowledge in your field is an unquestionable item of faith. That the dissertation process should be a long, ego-threatening, gut-wrenching experience goes without saying. That the dissertation is not acceptable until a committee of professors who could not agree on the time of day all agree to accept your complex work is academia’s most unshakable rubric. (p. 127)

Sternberg (1981) characterized the dissertation process from the viewpoint of his students in the process of completing their dissertation. “When I ask my students or clients to word-associate to their dissertations, some combination of the following responses is typical: fear, agony, torture, guilt, no end in sight..., anxiety, boredom, hate, despair, depression, humiliation, powerlessness” (p. 13). Sternberg posited several reasons why this process can be so devastating. He indicated that support systems in

place for completing coursework and qualifying examinations virtually disappear upon entry into the dissertation process. He also blamed the lack of importance of dissertation advising to the faculty dissertation advisor's advancement and career-promotion, the lack of graduate student community, the lack of preparedness of the Ph.D. candidate to complete the dissertation project, and the change in expectations from coursework to dissertation placed on the ABD student.

The results of research in the area of graduate completion rates, time to degree, and contributing factors to ABD status has prompted numerous guides and handbooks to be written on dissertation completion highlighting the many supportive factors and obstacles to degree completion. Baird (1990) summed up his literature review with some suggested advice for graduate students. He recommended: (a) "Don't take a full time job; ...If you can't get a fellowship, try to find a job as a research assistant; (b) Complete your required coursework and qualifying examinations as soon as possible; (c) Find a conscientious advisor; and (d) If you must get married, for goodness sake, don't have children" (p. 382). Baird's concerns echo much of the literature in this area and the suggested advice that abounds. With these recommendations in mind, we turn to a discussion of theories of doctoral retention in order to shed some light on how the variables discussed above relate to each other and to doctoral degree completion.

Theories of Doctoral Retention

Two main theories in the area of doctoral retention include Tinto's (1993) Theory of Doctoral Persistence and Girves and Wemmerus' (1988) Model of Graduate Student Degree Progress. Tinto's theory is based on his 1975 Theory of Undergraduate Retention that has been revised and updated many times in the years since. Tinto argued that many

differences exist between undergraduate and doctoral persistence but that the main difference is that “graduate persistence is also shaped by the personal and intellectual interactions that occur within and between students and faculty and the various communities that make up the academic and social systems of the institution” (p. 231). In this regard, doctoral persistence is likely to be “more of a reflection of the particular normative and structural character of the specific field of study” (p. 232) and “is but an early stage of a more general theory of professional career attainment” (p. 233).

Tinto (1993) noted that doctoral persistence is marked by three distinct stages titled transition, candidacy, and completion of the doctoral dissertation. The transition stage describes the first year of study and involves the transition of the doctoral student into the academic and social communities of the university. The candidacy stage describes the activities and variables that allow a student to progress academically and develop the competencies of their field. The final stage, doctoral dissertation completion, reflects the individual students’ ability to complete the doctoral dissertation. It also involves the role of faculty in supporting this attainment. Tinto noted that the role of external communities including families, jobs, etc. gain added importance at this stage of persistence. He went on to state that “the completion of this final stage of doctoral persistence calls for the availability of financial resources, both personal and institutional, that enable the candidate to devote the time needed to complete the research project” (p. 241).

Tinto (1993) also created a longitudinal model that indicated the variables theorized to affect student persistence at each of these stages. In the first stage, Tinto believed that student attributes including gender, age, race, ability, educational

experiences, student background, financial resources, goals, and institutional and external commitments could support or hinder the transition to doctoral study and influence the character of a student's participation in the program. In the second stage, he indicated that the academic system including relationships with faculty and peers would lead to academic and social integration and also to candidacy. In the final stage of doctoral dissertation completion, Tinto noted that the main variables would be research opportunities, faculty/advisor relationships, financial support and external commitments.

A second theory of doctoral retention is Girves and Wemmerus' (1988) Model of Graduate Student Degree Progress. The authors described a model for graduate progress and tested this model in this article. They found that Master's and Doctoral student degree progress is not the same and went on to describe a model of progress for each category of student. In the Empirical Model of Doctoral Student Degree Progress, two stages are described. The first involved variables such as department characteristics (size of department and university and faculty commitment, research and service), student characteristics (age, gender, ethnic group, marital status, and being a parent), financial support (individual versus external support), and perceptions of the faculty (relationships between faculty and students). The second stage involved the following variables: graduate grades, involvement (student participation in projects and activities involving faculty and students outside of the classroom), and satisfaction/alienation (combination of department characteristics and satisfaction with faculty relationships as well as a feeling of "fitting in"). The authors found that department characteristics and perceptions of the faculty had a direct effect on student progress, while financial support had an indirect affect on progress by affecting involvement. They noted that student characteristics

affected grades, but that neither had an effect on degree progress. They also found that satisfaction/alienation was affected by perceptions of the faculty but that it had no impact on degree progress.

Both Tinto (1993) and Girves and Wemmerus (1988) posited models agreeing that relationships with faculty and financial support are important variables affecting degree progress and dissertation completion. Tinto further noted that the role of external communities including families and jobs, research opportunities, and external commitments impact the persistence of doctoral students in the dissertation phase of study. Girves and Wemmurus added that department characteristics had a direct effect on student progress towards degree completion. These variables as well as the variables from the previous discussion on time to degree, completion rates, and the ABD phenomenon could be expected to be observed empirically as related to dissertation completion. As this is the case, these variables will be discussed in the following section.

Variables that Influence Dissertation Completion

Overall, there has been a dearth of systematic research exploring the variables that predict or explain failure or lack of progress in completion of the dissertation (Green, 1997). Of the articles located for this research, many were guides and not empirical articles (Long, Convey, & Chwalek, 1985; Malley-Morrison, Patterson, & Yap, 2003; Martin, 2001; McMichael, 1992; Monsour & Corman, 1991; Moore, 1985). Another large portion of the existing literature in this area is accounted for by dissertations (Bako-Okolo, 1996; Geisler, 1996; Hobish, 1978; Lenz, 1995; Morgan, 1995; Peacock, 1996; Sattell, 2002; Wagner, 1987). The empirical books and articles that do exist often seek to validate specific measures for use in the area of dissertation completion (Green &

Kluever, 1996; Green & Kluever, 1997; Johnson, Green & Kluever, 2000; Kluever & Green, 1998). Of the empirical investigations in the literature, many used participants across disciplines. College of Education students were used in only 11 cases (Bako-Okolo; Brown & Slater, 1960; Evans, 1996; Faghihi, Rakow, & Ethington, 1999; Green; Green & Kluever, 1996; Kluever, 1997; Kluever & Green; Kluever, Green, & Katz, 1997; Kluever, Green, Lenz, Miller, & Katz, 1995; Lenz, 1995) and psychology students in only 7 cases (Geisler, 1996; Johnson et al., 2000; Krieshok, Lopez, & Somberg, 2000; Morgan, 1995; Muszynski & Akamatsu, 1991; Phillips & Russell, 1994; Sattell, 2002). This finding is interesting since Bowen and Rudenstine (1992) noted that completion rates and time to degree vary across degrees. They indicated that time to degree is increased for students in the humanities and social sciences. Other authors have noted that students majoring in education and specifically in psychology take longer to graduate (Abedi & Benkin, 1987; Baird, 1990). Therefore, it seems important to study graduate students in education and psychology in order to find out specifically what hinders their progress toward degree completion compared to other disciplines. A range of variables has been explored in the literature on barriers and supports to dissertation completion with some interesting findings. The variables that have been studied can be categorized into three domains: demographic variables, internal variables, and external variables.

Demographic Variables. Demographic factors such as gender, ethnicity, age, marital status, number of dependents, financial support, employment status, geographical distance from the university, and career goals have been studied in the literature regarding dissertation completion. Gender is a variable that yielded mixed results. Several studies in the area of gender concluded that being female can be a barrier to

dissertation completion (Abedi & Benkin, 1987; Germeroth, 1991; Hobish, 1978; Ploshonka, 1994; Moore, 1985). However, these authors noted that the effect of gender can be explained in many ways. Abedi & Benkin stated that the differences by gender can be explained by the field of study in which the student is enrolled. Since women are enrolled in fields with longer times to doctorates, such as education, they take longer to degree completion. This was reiterated by Ploshonka who added that financial support is more likely to be awarded in fields where women are not highly concentrated, such as agriculture, mathematics, and engineering. Because of the significance of financial support to degree completion alluded to in theory, gender may be confounded by financial issues. Moore (1985) and Germeroth (1991) noted another interesting variable affecting gender's role in degree completion. They found that role conflict between student, spouse, and parent roles is more likely to affect women than men and cite this as a reason why women are more likely to fail to complete the dissertation. Moore also noted that women are more likely to experience role conflict between student and parent roles. He further stated that parenthood can have an effect on both genders but that it appears to be more severe for women. Jacks, Chubin, Porter, and Connolly (1983) supported these findings and found that family problems were more significantly related to a woman's ability to complete her degree. On the other hand, researchers such as Girves & Wemmerus (1988), Krieschok et al. (2000), and Phillips and Russell (1994) concluded that gender had no independent effect on dissertation completion outside of the variability accounted for by degree and financial support. It appears, however, that much of the data in this area supports the difficulty that women experience attaining their

degree, especially in relation to gender roles, degree choice, marital status, and/or number of children.

Ethnicity and age have not been widely researched in regard to dissertation completion. Girves and Wemmerus (1988) found that ethnicity was not related to dissertation completion. Abedi and Benkin (1987) support this finding by noting that although the interaction of citizenship and field accounted for a significant amount of variance, it was not enough to be included in the regression equation after postdoctoral plan, number of dependents, gender, and field of study. These limited results would indicate that ethnicity is not related to dissertation completion. Age, on the other hand, was shown in one study (Peacock, 1996) to be a barrier to dissertation when the doctoral student is of increased age (defined as older than 35 years old).

Marital status and number of dependents is another demographic variable affecting dissertation completion. Marital status and number of dependents can, however, be complicated by financial support and emotional support/problems, which shall be addressed in later sections. Several authors noted that family problems can delay completion or can cause failure to complete the dissertation, while family support can make completion more likely (Jacks et al., 1993; Lenz, 1995; Lenz, 1997; Long et al., 1985; Moore, 1960; Moore, 1985; Rode, 1999). On a similar note, Wagner (1987) found that having a spouse was a supportive factor for completion, while Rode noted that personal and family changes, problems and illness could be a barrier to completion. Krieschok et al. (2000) also stated “pity the intern who marries or adds a new family member while on internship” (p. 330) as a hazard to dissertation completion. Abedi and Benkin (1987) concluded that “doctoral students who have larger families may have a

great deal of moral support, but they also have to spend time with others that could be spent on their studies. In addition, they are also more likely to have to work to help support their families” (p. 12). They found that number of dependents was highest in predictive ability for time taken to degree completion after source of financial support and postdoctoral plans. On the other hand, Girves and Wemmerus (1988) concluded that marital status was unrelated to completion of the dissertation. Overall, the research in this area points to the mixed role that families can play. On one side, families and children can provide emotional support and stability to the ABD candidate. However, when problems arise, marital status and children can take attention away from the ABD’s focus on dissertation and degree completion.

As mentioned previously, marital status and number of dependents is also related to financial issues, including financial support and employment status. Financial support has been shown to support dissertation completion (Rode, 1999), and lack of financial support has been shown to be a barrier to completion (Abedi & Benkin, 1987; Berelson, 1960; Bowen & Rudenstine, 1992; Brown & Slater, 1960; Germeroth, 1991; Jacks et al., 1983; Kluever, 1997; Lenz, 1995; Lenz, 1997; Long et al., 1985, Moore, 1960; Wagner, 1987). The National Commission on Student Financial Assistance (1983) went as far as recommending increased support for talented graduate students, in particular women and minorities, recognizing the burden of financial issues on graduate students in the U.S. and the impact of financial problems on graduate student attrition. In addition, work schedule (Wagner, 1987), change in working conditions (Peacock, 1996), job demands (Germeroth; Moore; Rode), working full-time, and completing an internship or teaching load (Long et al.; Martin, 2001; Wright, 1991) can be a barrier to completing the doctoral

dissertation. Along the same line, Wagner and Krieshok et al. (2000) found that students who completed the dissertation proposal prior to accepting employment or beginning an internship were more likely to make progress on the dissertation and inevitably complete it. Across theories and literature in this area, financial support is posited as a highly important variable related to graduate degree completion. Abedi and Benkin concluded that the source of financial support predicted more variance in time to degree than postdoctoral plans, number of dependents, sex, and field of study. Bowen and Rudenstine also found that “students who had to rely primarily on their own resources had markedly higher attrition rates and longer time to degree than students who received various forms of financial aid” (p. 12). Clearly, financial issues have a great impact on dissertation and degree completion.

Related to employment status, geographical distance from the university has been shown in several cases to be related to completion (Muszynski & Akamatsu, 1991; Wagner, 1987; Wright, 1991). Those students who remained close to the university they were attending were more likely to complete their dissertations. Access to university resources and services and access to university personnel could account for this result.

Additionally, career goal has been shown to be related to dissertation and degree completion. Wagner (1987) found that students’ priority for obtaining their Ph.D., which is related to career goal, was shown to support dissertation completion. Baird (1990) indicated that students who were interested in working as university faculty were more likely to complete their degree than students with other career goals. Sternberg (1981) also noted a relationship between career goal and dissertation completion. He stated that

It is my conviction that only the candidate's firm intention to become a full (the doctorate bestowing full membership) professional in his dissertation field, combined with his constant self-reminders of that intention and eventual gratification through the ups and downs of the long dissertation "run," is an adequate long-range reward for the task confronting him. (p. 34)

Finally, Abedi and Benkin (1987) found that postdoctoral plan (students interested in postdoctoral study or training versus students interested in employment) was second only to source of financial support in predicting time to degree. Students interested in postdoctoral study had a significantly shorter time to degree than students seeking employment. The authors noted, however, that this variable may be confounded by employment because students interested in postdoctoral employment were more likely to be employed while completing their degree. These findings suggest that postdoctoral plans as well as the additional demographic variables mentioned above can affect dissertation and degree completion in both positive and negative directions.

Internal Variables. Internal variables such as research self-efficacy, individual characteristics and time pressures/stress have also been shown to be related to dissertation completion. As indicated by theory, research skills and confidence in one's ability to complete the dissertation has been an area of study related to dissertation completion. Faghihi et al. (1999) found that research self-efficacy and relationship with committee predicted completion of the dissertation regardless of the students' age, gender, financial problems, and years in the program. He also found that graduate assistants who were more likely to be involved in research prior to the beginning of the dissertation process

were more likely to have higher research self-efficacy and were more likely to complete the dissertation. Phillips and Russell (1994) found that research self-efficacy was a supportive factor to completion of the dissertation, while Geisler (1996) found that research self-efficacy was the most important factor in predicting dissertation completion. Related to self-efficacy, research experience (Kluever, 1997), feelings about statistics (Wagner, 1987), technical skills (Long et al., 1985), and focus on research skills in the doctoral program (Martin, 2001) were shown to affect dissertation completion in the direction expected. Furthermore, Bako-Okolo (1996) found that research self-efficacy correlated with research training environment and goal setting. He also found that performance in statistics courses could independently account for differences in research self-efficacy. In summary, research self-efficacy has been found to be an overwhelming predictor of a student's ability to complete the dissertation and doctoral degree.

Individual characteristics have also been studied in relationship to dissertation completion. Variables that have shown to support dissertation completion have been one's own determination (Germeroth, 1991), higher scores on the California Personality Inventory subscale of achievement via independence (Hobish, 1978), level of masculinity (Hobish), a preference for Sensing on the Myers Briggs Type Indicator (Peacock, 1996), and personal organization and skills (Green & Kluever, 1997). Individual characteristics shown to be a barrier to dissertation completion include procrastination (Green, 1997; Johnson et al., 2000; Muszynski & Akamatsu, 1991), lack of persistence (Kluever, 1997), and excuses and lack of commitment (Long et al., 1985). Muszynski and Akamatsu (1991) found that specific elements of procrastination such as low frustration tolerance, rebellion, self-denigration, insufficient reinforcement/lack of structure, and task aversion

showed significant effects in dissertation delay. Finally, perfectionism has been found to show no affect on dissertation completion (Green) or to enable or inhibit dissertation completion based on the person's manifestation of this characteristic during the dissertation process (Lenz, 1995; Lenz, 1997). In summary, a variety of individual characteristics have been shown to affect either positively or negatively the completion of the dissertation.

Finally, time pressures and stress have been studied in this area. Krieshok et al. (2000) found that the best predictor of dissertation completion was the number of hours spent on the dissertation. In contrast, time pressure, time management problems, and lack of time were found to be barriers to completion (Green & Kluever, 1997; Kluever, 1997; Lenz, 1995; Lenz, 1997; Martin, 2001; Wagner, 1987). Also, stress, personal or family changes, problems, or illnesses, and external pressure were found to be barriers to dissertation completion (Green & Kluever; Lenz; Rode, 1999). More specifically, Peacock (1996) found that having a limited number of life changes such as moving, getting married, having a child, etc. supported students in completing the dissertation. Consequently, many internal variables have been shown to relate to dissertation completion including research self-efficacy and research skills, individual personality characteristics, time pressures, and stress.

External Variables. Two important external variables that have been supported in the literature regarding their impact on degree completion include emotional support and relationship with advisor/committee. Emotional support appears to have a significant impact on the likelihood a student will complete the dissertation. Support from family (Germeroth, 1991; Lenz, 1995; Lenz, 1997; Peacock, 1996), peers (Germeroth; Lenz,

1995; Lenz, 1997; Rode, 1999), a higher power (Germeroth), a counselor (Germeroth), or a support group (Evans, 1996) has been shown to enhance the likelihood of dissertation completion. Emotional support in general was also found to support dissertation completion (Sattell, 2002; Sigafus, 1998). The opposite has also shown to be true. For instance, the lack of feedback and reinforcement and family problems were found to be a barrier to dissertation completion (Long et al., 1985; Moore, 1960).

Lastly, the relationship between the dissertation chairperson/advisor/committee and the student can have a profound affect on dissertation completion. A perceived positive relationship with the advisor and committee, access to the advisor, and having a caring and supportive advisor was shown to enhance the likelihood of dissertation completion (Faghihi et al., 1999; Kluever, 1997; Lenz, 1995; Lenz, 1997; Muszynski & Akamatsu, 1991; Peacock, 1996; Rode, 1999; Wagner, 1987). Faghihi et al. found that the relationship with the advisor and committee and research self-efficacy were the two most important variables to predicting dissertation completion regardless of gender, age, financial support and number of years in the program. Jacks et al. (1983) supported these findings by noting that no guidance or encouragement from the advisor or problems with the doctoral committee could be a barrier to dissertation completion. Lastly, Cheatham, Edwards, and Erickson (1982) surveyed speech communication doctoral students and found that candidates desired more and quality interaction with their advisors and committees in order to support their dissertation progress. The advisor/advisee relationship, the committee/student relationship, and emotional support appear to have a powerful effect on dissertation completion.

Demographic and internal and external variables have been alluded to in theory and have been empirically shown to be related to time to degree, degree completion and dissertation completion. However, no quantitative measure of these variables had been represented in the literature until the creation of the Dissertation Barriers Scale (Green & Kluever, 1997). This measure may be an important addition to the literature in light of the significance of doctoral degree completion, the theories of doctoral degree retention, and the literature on barriers and supportive variables to dissertation completion. However, the Dissertation Barriers Scale is a relatively new measure that has not been widely used in the literature. A discussion of this measure follows.

The Dissertation Barriers Scale

The Dissertation Barriers Scale (DBS; Green & Kluever, 1997) consists of 45 items that assess “doctoral students’ and graduates’ concepts of barriers to dissertation completion” (p. 5). However, the authors concluded in this study that 6 items should be deleted due to problems with fit and usefulness, bringing the total of items for the scale to 39. The purpose of the instrument is to research the dissertation process and identify important barriers to completion, and the goal of research with this instrument would be to improve mentoring of doctoral students.

Detailed information on the development of the DBS was obtained from an unpublished study by Green and Kluever (1997). This study was completed with participants from the College of Education at an private urban university. Participants included 239 graduates and students who had begun the program at about the same time. Graduates had completed their dissertations, while students had not. Males made up 29% of the sample, while females made up 71% of the sample. Demographic information on

the sample concluded that students ranged in age from 28 to 70 years ($M = 44.4$ yr.), while graduates ranged in age from 27 to 63 years ($M = 41.8$ yr.). Also, a large percentage of graduates and students were employed full-time (92% of male graduates, 72% of female graduates, 89% of male students and 72% of female students).

Green and Kluever (1997) found that a discriminant analysis correctly predicted membership in either the student or graduate group for 81% of the respondents. The total scale score reliability was measured by coefficient alpha of .91. They also found a 4-factor solution for the instrument. These factors were labeled advisor/committee functioning, personal organization and skills, time management and external pressures, and research skills, with resulting reliabilities of .82, .81, .81, and .71 respectively.

Only two other studies have included the DBS. One study by Green and Kluever (1997) also administered measures of procrastination and responsibility. They found low to low-moderate negative correlations between the factors on the DBS and the subscales on both the measures as well as with the total score of the procrastination instrument. Another study conducted by Johnson et al. (2000) used the Dissertation Barriers Scale as a validity measure for another measure. They found significant correlations between the DBS and their measure of procrastination. This preliminary research suggests that the DBS appears to have decent psychometric properties but that the measure would benefit from further testing.

Although the DBS is grounded in theory and has demonstrated promising psychometric properties, this instrument has not been widely used in the literature. Thus, it is important to explore the factor structure and reliability with a different sample.

Summary

Completion of the dissertation is a long and tedious process that can be hindered by many variables. The Dissertation Barriers Scale (DBS) seeks to quantify several of these variables and may prove to be an important measure for understanding doctoral students' and graduates' perceptions of barriers to dissertation completion. The DBS also appears to have a high degree of predictive ability and may be useful in further research to determine how to best support students in the dissertation completion process.

Additionally, the DBS may have practical implications for university administrators and faculty advisors in highlighting areas of focus for their individual work with students.

Finally, this study seeks to contribute unique knowledge to the literature by surveying a specific sample of doctoral psychology students from APA-accredited psychology programs. Because there has been limited research on the DBS to date, the purpose of this study is to investigate the psychometric properties of the DBS such as reliability, validity, and factor structure. The research questions to be addressed in this study will be (a) What is the factor structure of the DBS?; (b) What are the psychometric properties (reliability and construct validity) of this instrument?; (c) Does a linear combination of the total scores on the SERM, AWAI-S, and MSPSS predict the component scores of the DBS?; and (d) What demographic variables predict DBS total scores?

Chapter 3

Method

Participants

Participants will be doctoral psychology students who have passed their competency exams and doctoral psychology program graduates who have graduated in the past 2 years. They will be recruited via emails distributed through the training directors of APA-approved psychology doctoral programs.

Previous literature researching psychometric properties of instruments with a similar number of items as the DBS sampled participants ranging from $n = 154$ to $n = 394$ (Green & Kluever, 1996; Green & Kluever, 1997; Johnson et al., 2000; Muszynski & Akamatsu, 1991; Phillips & Russell, 1994; Schlosser & Gelso, 2001). Other authors have suggested “rules of thumb” for calculating how many participants are needed for a factor analysis. For instance, Bryant and Yarnold (1995) suggested that the subjects-to-variables ratio be no lower than 5. With 39 items/variables on the DBS, that would indicate a minimum of 195 participants. Hatcher (1994) made a similar recommendation suggesting that the participant number be the larger of either 5 times the number of variables or 100. Finally, Hutcheson and Sofroniou (1999) recommended that a factor analysis should have from 150 to 300 cases with the number of participants toward the 150 end if there are only a few highly correlated variables. Because the items on the DBS are not highly correlated, as evidenced by only low to moderate correlations among items, the number of participants should be closer to 150 than 300 according to this rule of thumb. Therefore, based on previous literature and recommendations, this study will seek to survey 200 participants.

Instruments

Four instruments will be administered for this study: the Dissertation Barriers Scale (DBS), the Self-Efficacy in Research Measure (SERM), the Advisor Working Alliance Inventory – Student Version (AWAI-S), and the Multidimensional Scale of Perceived Social Support (MSPSS). In addition, a demographic questionnaire (Appendix E) will be completed. The SERM, the AWAI-S, and the MSPSS are being included in this study in order to provide validity testing for the DBS and because the variables measured in each instrument have been shown in the literature to be highly related to dissertation completion.

Dissertation Barriers Scale (DBS; Green & Kluever, 1997). The DBS consists of 45 items that assess “doctoral students’ and graduates’ concepts of barriers to dissertation completion” (p. 5). However, the authors deleted 6 items due to problems with fit and usefulness, bringing the total number of items for the scale to 39. The DBS was developed to research the dissertation process and identify important barriers to completion. The range of response options for the original measure was from -3 (major hindrance) to +3 (major help), with a choice for “not a concern” and for “not applicable.” Two major differences exist between the instrument that is being used in this study and the original instrument based on the authors’ recommendations. First, the scale has been decreased from 45 items to 39 items as mentioned previously. Second, Green and Kluever noted that future use of this instrument should employ a revised response scale because most participants did not utilize the full scale’s range. Thus, for the purposes of this study, the scale will be revised to include a 5-point Likert scale ranging from 1 (major hindrance) to 5 (major help). The choice for “not a concern” will change to

neutral (3) and “not applicable” will be eliminated. The revision will also make the DBS response choices more similar to the other research measures in the study. Scores for the full scale range from 5 to 195, with lower scores indicating that the participant perceives the items more as a hindrance than a help. Higher scores indicate that the participant perceives the items more as a help than a hindrance. Subscales will be similarly scored.

The reliability coefficient for the total scale was .91 (Green & Kluever, 1997). Reliabilities for the factors were .71 (Research Skills), .81 (Personal Organization and Skills), .81 (Time Management and External Pressures, and .82 (Advisor/Committee Functioning). Construct validity has also been investigated by correlating the DBS to measures of procrastination (Green & Kluever; Johnson et al., 2000) and responsibility (Green & Kluever). Low to moderate negative correlations were found between the factors on the DBS and the subscales of all measures.

Self-Efficacy in Research Measure (SERM; Phillips & Russell, 1994). The SERM consists of 33 items presented on a 10-point Likert scale ranging from no confidence (0) to total confidence (9). The range of the full scale score is 0 to 297, with higher scores representing stronger confidence in research skills and lower scores representing less or no confidence in research skills. The purpose of this instrument is to measure self-efficacy as it relates to research skills and tasks. Because research self-efficacy has been shown in the literature to be highly related to dissertation completion, this measure was included in this study. The total scale score had an alpha reliability of .96 (Phillips & Russell, 1994). Although the authors of the SERM also found high reliability for the four subscales, subsequent research done by Forester, Kahn, and Hesson-McInnis (2004) indicated that the full scale score on the SERM is the only reliable measure for this

instrument since the factor structure was not verified in their study. Significant correlations were found between the SERM and two other measures, a measure of research training environment ($r = .39$) and a measure of research productivity ($r = .45$).

The Advisor Working Alliance Inventory – Student Version (AWAI-S; Schlosser & Gelso, 2001). The AWAI-S consists of 30 items presented on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). The range of the full scale score is 30 to 150, with higher scores representing stronger advisor working alliance and lower scores representing weaker advisor working alliance. Three factors were found for this instrument including Rapport, Apprenticeship, and Identification-Individuation. The authors found a high correlation between subscales and the total scale score and moderately high correlations between subscales. Also, correlations were found between the AWAI and measures of research self-efficacy, attitudes toward research, and advisor's perceived expertness, attractiveness, and trustworthiness. This measure was included in this study due to its ability to measure advisor/advisee working alliance which has been shown in the literature to be highly related to dissertation completion.

Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988). The MSPSS is a 12-item scale with a 7-point Likert response ranging from very strongly disagree (1) to very strongly agree (7). The purpose of this instrument is to subjectively measure the adequacy of social support from three sources, Family, Friends, and Significant Others. The MSPSS was included in this study due to its ability to measure perceived social support which has been shown in the literature to be highly related to dissertation completion and because of its strong psychometric properties. The measure produces a total scale score and three factor scores including

Family, Friends, and Significant Others. The range of the full scale score is 12 to 84, with higher scores representing higher perceived levels of support and lower scores representing lower perceived levels of support. The reliability and test-retest reliability for the total score was .88 and .85 respectively. The factor reliabilities and test-retest reliabilities were .91/.72 (Significant Other), .87/.85 (Family), and .85/.75 (Friends).

Research with this instrument has sampled populations as diverse as pregnant women (Zimet, Powell, Farley, Werkman, & Berkoff, 1990), adolescents (Canty-Mitchell & Zimet, 2000; Zimet et al.), and pediatric residents (Zimet et al.). Reliability, validity, and factor structure findings from the original study were supported in these studies. Zimet et al. confirmed the subscales and found a total score reliability ranging from .84 to .92 for the varying populations. The subscales also had high reliability ranging from .81 to .98 depending on subscale and population. Dahlem, Zimet, and Walker (1991) surveyed undergraduates as in the original study and found verification for the factor structure and reliability (.91 for total scale). Finally, Canty-Mitchell and Zimet (2000) found support for the factor structure and reliability (.93 for total scale).

Discriminant validity was further tested and was supported. For instance, perceived social support was negatively correlated with measures of anxiety (Zimet et al., 1988) and depression (Dahlem et al., 1991; Zimet et al., 1988). Also, a measure of family caring was more strongly correlated with the MSPSS family subscale as compared with the correlations of the MSPSS subscales of friends and significant others (Canty-Mitchell & Zimet, 2000). Finally, Zimet et al. (1990) found that married pediatric residents reported a significantly greater amount of support from significant other than non-married residents.

Procedures

A description of the study will be sent via email to the training directors of APA-approved doctoral psychology programs. They will be asked to disseminate this email to students in psychology doctoral programs that require a dissertation who have either passed competency exams and remain students or who have graduated within the past two years. These emails will include a consent form and the website link for ease of participant involvement

Once the participant reads the consent form, they can click on the link to the survey if they choose to participate. They will then be directed to the Web page containing the demographic questionnaire and the four additional instruments. Due to the web-based design of the survey, counterbalancing of the instruments will not be possible. Each participant will complete the DBS, the SERM, the AWAI, and the MSPSS in that order. When they have completed all instruments, participants will be thanked for their participation, will be given contact information for the principal researcher, and will be told how to enter the raffle prize drawing.

Research Questions

The research questions to be addressed in this study will be (a) What is the factor structure of the DBS?; (b) What are the psychometric properties (reliability and construct validity) of this instrument?; (c) Does a linear combination of the total scores on the SERM, AWAI-S, and MSPSS predict the component scores of the DBS?; and (d) What demographic variables predict DBS total scores?

Based on previous literature, the hypothesis for the first research question would be that a 4-factor solution is indicated and that those factors would be similar to those

found by the original authors, i.e., Advisor/Committee Functioning, Personal Organization and Skills, Time Management and External Pressures, and Research Skills. However, because this sample is different from that of the original study (psychology doctoral students vs. college of education graduate students), the factors may be unique to this new sample.

The hypotheses for the second research question would include the following sub-hypotheses: (a) Reliability for the DBS full scale and the subscales will be high, (b) The AWAI-S will be significantly correlated with the advisor/committee functioning subscale of the DBS, (c) The SERM will be correlated significantly with the research skills subscale of the DBS, and (d) Scores on the MSPSS will be significantly correlated with the DBS total score.

For the third and fourth research questions, previous literature would indicate that scores on the SERM, AWAI-S, and MSPSS would predict the DBS total score and component scores. Finally, demographic variables have been shown to be related to dissertation completion and it is hypothesized that they will predict DBS scores.

Data Analysis

To investigate the underlying factor structure of the DBS, a principal components factor analysis will be conducted. Correlations among component scores on the DBS, the SERM, the AWAI-S, and the MSPSS will be examined to assess the construct validity of the DBS. Coefficient alphas will be calculated on all measures and subscales to assess their internal consistency/reliability. Additionally, multiple regressions analyses will be conducted using a linear combination of scores on the SERM, the AWAI-S, and the MSPSS to predict the DBS component scores. Finally, a multiple regression will be

conducted using a linear combination of selected demographic variables to predict DBS scores.

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Appendix A

DBS

Were each of the following concerns to you or difficulties you encountered in completing your dissertation? Please use the following scale to respond. It was a:

	Major hindrance		Neutral		Major Help
	1	2	3	4	5
	<u>Hindrance</u>				<u>Help</u>
1. loss of free time to spend with family/friends	1	2	3	4	5
2. library hours	1	2	3	4	5
3. conflict with dissertation director	1	2	3	4	5
4. dissertation director's perfectionism	1	2	3	4	5
5. my own perfectionism	1	2	3	4	5
6. my lack of interest in dissertation topic	1	2	3	4	5
7. faculty's lack of interest in my topic	1	2	3	4	5
8. choosing the dissertation topic	1	2	3	4	5
9. narrowing the dissertation topic	1	2	3	4	5
10. lack of structure of dissertation process	1	2	3	4	5
11. difficulty with time management	1	2	3	4	5
12. inadequate prior exposure to research	1	2	3	4	5
13. inadequate prior exposure with data analysis	1	2	3	4	5
14. obstructive committee member	1	2	3	4	5
15. lack of support from dissertation director	1	2	3	4	5
16. doing the literature review	1	2	3	4	5
17. collecting the data	1	2	3	4	5
18. job-related pressures/demands	1	2	3	4	5
19. setting aside time for the dissertation	1	2	3	4	5
20. setting aside a space/room for dissertation	1	2	3	4	5

	Major hindrance		Neutral		Major Help	
	1	2	3	4	5	
	<u>Hindrance</u>				<u>Help</u>	
21. getting drafts back from committee members	1	2	3	4	5	
22. lack of constructive/concrete feedback from committee	1	2	3	4	5	
23. delay in starting dissertation after comps	1	2	3	4	5	
24. conflict with role as home/family head	1	2	3	4	5	
25. inability to plan ahead	1	2	3	4	5	
26. isolation from other students	1	2	3	4	5	
27. advisor's support and encouragement	1	2	3	4	5	
28. prompt return of drafts from advisor	1	2	3	4	5	
29. collegial relationship with advisor	1	2	3	4	5	
30. self-direction	1	2	3	4	5	
31. support of family, friends	1	2	3	4	5	
32. willingness to take academic risks	1	2	3	4	5	
33. organizational skills	1	2	3	4	5	
34. approaching dissertation in sections rather than as one complete task	1	2	3	4	5	
35. ability to live with ambiguity	1	2	3	4	5	
36. advisor's expectation that you would finish	1	2	3	4	5	
37. love of the dissertation topic	1	2	3	4	5	
38. persistence	1	2	3	4	5	
39. sticking to a schedule	1	2	3	4	5	

Appendix B

SERM

The following items are tasks related to research. Please indicate your degree of confidence in your ability to successfully accomplish each of the following tasks on a scale from 0-9 with 0 representing no confidence and 9 representing total confidence.

	0-----1-----2-----3-----4-----5-----6-----7-----8-----9	
	no	total
	confidence	confidence
15.	Selecting a suitable topic for study	_____
16.	Knowing which statistics to use	_____
17.	Getting an adequate number of subjects	_____
18.	Writing a research presentation for a conference	_____
19.	Writing the method and results sections for a research paper for publication.	_____
20.	Manipulating data to get it onto a computer system	_____
21.	Writing a discussion section for a thesis or dissertation	_____
22.	Keeping records during a research project	_____
23.	Collecting data	_____
24.	Designing an experiment using non-traditional methods e.g., ethnographic, cybernetic, phenomenological approaches	_____
25.	Designing an experiment using traditional methods e.g., experimental, quasi-experimental designs	_____
26.	Making time for research	_____
27.	Writing the introduction and literature review for a dissertation	_____
28.	Reviewing the literature in an area of research interest	_____

	0-----1-----2-----3-----4-----5-----6-----7-----8-----9	
	no	total
	confidence	confidence
15.	Writing the introduction and discussion sections for a research paper for publication	_____
16.	Contacting researchers currently working in an area of research interest	_____
17.	Avoiding the violation of statistical assumptions	_____
18.	Writing the method and results sections of a dissertation	_____
19.	Using simple statistics e.g., t-test, anova, correlation, etc.	_____
20.	Writing the introduction and literature review for a thesis	_____
21.	Controlling for threats to validity	_____
22.	Formulating hypotheses	_____
23.	Writing the method and results sections of a thesis	_____
24.	Utilizing resources for needed help	_____
25.	Understanding computer printouts	_____
26.	Defending a thesis or dissertation	_____
27.	Using multivariate statistics e.g., multiple regression, factor analysis, etc.	_____
28.	Using statistical packages e.g., SPSS-X, SAS, etc.	_____
29.	Selecting a sample of subjects from a given population	_____
30.	Selecting reliable and valid instruments	_____
31.	Writing statistical computer programs	_____
32.	Getting money to help pay for research	_____
33.	Operationalizing variables of interest	_____

Appendix C

(AWAI-S)

These 30 items pertain to your perceptions about your relationship with your advisor. For the purposes of this study, the term advisor is referring to the faculty member that has the greatest responsibility for helping guide you through your graduate program (e.g. advisor, major professor, committee chair, dissertation chair). Please respond to the items using the following scale:

	Strongly Disagree		Neutral		Strongly Agree
1. I get the feeling that my advisor does <u>not</u> like me very much.	1	2	3	4	5
2. My advisor introduces me to professional activities (E.g. conferences, submitting articles for journal publication)	1	2	3	4	5
3. I do <u>not</u> want to be like my advisor.	1	2	3	4	5
4. My advisor welcomes my input into our discussions.	1	2	3	4	5
5. My advisor helps me conduct my work within a plan.	1	2	3	4	5
6. I tend to see things differently from my advisor.	1	2	3	4	5
7. My advisor does <u>not</u> encourage my input into our discussions.	1	2	3	4	5
8. My advisor has invited me to be a responsible collaborator in his/her own work.	1	2	3	4	5
9. I do <u>not</u> want to feel similar to my advisor in the process of conducting work.	1	2	3	4	5
10. My advisor is <u>not</u> kind when commenting about my work.	1	2	3	4	5
11. My advisor helps me establish a timetable for the tasks of my graduate training.	1	2	3	4	5
12. My advisor and I have different interests.	1	2	3	4	5
13. I do <u>not</u> feel respected by my advisor in our work together.	1	2	3	4	5
14. My advisor is available when I need her/him.	1	2	3	4	5
15. I feel like my advisor expects too much from me.	1	2	3	4	5
16. My advisor offers me encouragement for my accomplishments.	1	2	3	4	5
17. Meetings with my advisor are unproductive.	1	2	3	4	5
18. I do <u>not</u> think that my advisor believes in me.	1	2	3	4	5
19. My advisor facilitates my professional development through networking.	1	2	3	4	5
20. My advisor takes my ideas seriously.	1	2	3	4	5
21. My advisor does <u>not</u> help me stay on track in our meetings.	1	2	3	4	5
22. I do <u>not</u> think that my advisor has my best interests in mind.	1	2	3	4	5
23. I learn from my advisor by watching her/him.	1	2	3	4	5
24. I feel uncomfortable working with my advisor.	1	2	3	4	5
25. I am an apprentice of my advisor.	1	2	3	4	5
26. I am often intellectually "lost" during my meetings with my advisor.	1	2	3	4	5
27. I consistently implement suggestions made by my advisor.	1	2	3	4	5
28. My advisor strives to make program requirements as rewarding as possible.	1	2	3	4	5
29. My advisor does <u>not</u> educate me about the process of graduate school.	1	2	3	4	5
30. My advisor helps me recognize areas where I can improve.	1	2	3	4	5

Thank you very much for your time!

Appendix D

MSPSS

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

Very Strongly Disagree

Neutral

Very

Strongly Agree

1

2

3

4

5

6

7

1. There is a special person who is around when I am in need. 1 2 3 4 5 6 7

2. There is a special person with whom I can share my joys and sorrow.

1 2 3 4 5 6 7

3. My family really tries to help me.

1 2 3 4 5 6 7

4. I get the emotional help and support I need from my family. 1 2 3 4 5 6 7

5. I have a special person who is a real source of comfort to me. 1 2 3 4 5 6 7

6. My friends really try to help me. 1 2 3 4 5 6 7

7. I can count on my friends when things go wrong. 1 2 3 4 5 6 7

8. I can talk about my problems with my family. 1 2 3 4 5 6 7

9. I have friends with whom I can share my joys and sorrows. 1 2 3 4 5 6 7

10. There is special persona in my life who cares about my feelings.

1 2 3 4 5 6 7

11. My family is willing to help me make decisions. 1 2 3 4 5 6 7

12. I can talk about my problems with my friends. 1 2 3 4 5 6 7

Appendix E

Demographic Questionnaire

Please complete the following questions.

1. What APA-approved psychology doctoral program are you enrolled in or have you completed?
Clinical psychology
Counseling Psychology
School Psychology
Other: _____ (specify)
2. Does/did your Ph.D. program require you to complete a dissertation?
Yes
No
3. Gender:
Male
Female
4. Age
20-29
30-39
40-49
50-59
60+
5. Race/Ethnicity:
Caucasian/White
African-American/Black
Hispanic/Latino/Mexican-American
American Indian
Asian-American/Pacific Islander
Other: _____ (specify)
6. Marital status:
Single, Separated/Divorced, or Widowed
Married or Committed relationship
7. Do you have children?
Yes
No
8. What is your status in the doctoral program in which you are/were enrolled?
In the process of completing coursework

Completed comprehensive exams
Completed internship
Completed dissertation/graduated

9. Was your proposal required to be completed prior to applying for internship?
Yes
No
10. Was your proposal required to be completed prior to attending internship?
Yes
No
11. What is your career goal?
University faculty
Practitioner
Researcher
Other: _____ (please specify)
12. What is your employment status?
Employed full-time
Employed part-time
Unemployed
13. What primary form of financial support do you/did you receive while completing your dissertation?
Grants, Loans, Scholarships
Personal finances
Family finances
Employment
14. How close geographically are you/were you to the University where you attended while completing your dissertation?
Within one hour driving distance
Over one hour driving distance
15. What month/year did you begin your doctoral coursework? _____
16. What month/year do you plan to complete/did you complete your dissertation?

Appendix F

INFORMED CONSENT FORM FOR RESEARCH BEING CONDUCTED UNDER THE AUSPICES OF THE UNIVERSITY OF OKLAHOMA-NORMAN CAMPUS

March 2005

Dear Doctoral Student:

I am a graduate student under the direction of Dr. Denise Beesley in the Educational Psychology Department at The University of Oklahoma-Norman Campus. I invite you to participate in a research study being conducted under the auspices of the University of Oklahoma-Norman Campus entitled "Factor Analysis of the Dissertation Barriers Scale: Evidence for Dimensionality and Construct Validity." The purpose of this study is to survey psychology doctoral students who are required to write a dissertation as part of their degree in order to determine whether or not the Dissertation Barriers Scale is a useful measure for looking at what supports and/or blocks dissertation completion. Because of the nature of this study, please consider filling out the survey only if you have passed your competency exams and remain a student or if you are within two years of completing your degree.

Your participation will involve completing a web survey and should only take about 15 to 20 minutes. Your involvement in the study is voluntary, you may choose not to participate or to stop at any time, and there will be no penalty should you decide not to participate or complete the survey. This survey is anonymous, and there are no foreseeable risks associated with your involvement in this project beyond those present in routine daily life. The results of this study may be published, but your name will not be linked to responses in publications that are released from the project. In fact, the published results will be presented in summary form only. All information you provide will remain strictly confidential.

The findings from this project will provide valuable information on ways to support doctoral students in dissertation completion with no cost to you other than the time it takes to complete the survey.

If you have any questions about this research project, please feel free to call me at (918) 284-2853 or Dr. Beesley at (405) 325-5974 or e-mail me at kristin.e.ober-1@ou.edu. Questions about your rights as a research participant or concerns about the project should be directed to the Institutional Review Board at The University of Oklahoma-Norman Campus at (405) 325-8110 or irb@ou.edu

By clicking on the website link below, you will be agreeing to participate in the above described project and you will be routed to the web survey. If you choose to participate, you will be eligible to enter a raffle for a \$50 gift card at the end of the survey. If you choose not to participate, please click out of your browser now or click on the "back" button.

<http://www.surveymonkey.com/s.asp?u=36640855524>

Thank you for your consideration!

Sincerely,
Kristin Ober, ABD