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Individual Characteristics as Predictors of Program Completion of Ph.D. Students in Makerere University

Abishag Namutebi^{1*}, Prof. Christopher B. Mugimu, PhD¹ & Dr. Tom Darlington Balojja, PhD¹

¹ Makerere University, P. O. Box 7062, Kampala, Uganda.

* Author for Correspondence Email: vianneylme@gmail.com

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The long time to obtain a Ph.D. degree has been a source of contention (Skopek et al., 2022), and graduate schools worldwide are working to reduce the long time to degree (Geven et al., 2018). This study examined individual characteristics as predictors of program completion of Ph.D. students at Makerere University. Anchoring in Tinto's Model of persistence, individual characteristics included socioeconomic status (SES), quality of relationship with family, studies-family balance, expectations, self-efficacy, grit, writing, and prior experiences. Using a mixed methods approach, both cross-sectional and phenomenological designs were used to collect data from 104 Ph.D. graduates through self-administered questionnaires while seven participants were interviewed. Data was analysed using descriptive and inferential statistics, while qualitative data used thematic analysis. Descriptive statistics involved the calculation of the mean, while inferential analysis involved using a regression model. Thereafter, data was interpreted using a Joint Display Table. The results revealed that individual characteristics, namely SES and prior experiences, positively and significantly predicted program completion. However, the quality of relationship with family, study-family balance, expectations, self-efficacy, grit, and writing did not. Therefore, some of the findings agree with Tinto's Model while others do not, hence recommending that the management of universities should support Ph.D. students considering their differences in individual characteristics based on their SES and prior experiences. However, management should not prioritise the quality of relationship with family, study-family balance, expectations, self-efficacy, grit, and writing.

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INTRODUCTION

For a long time (Rakes et al., 2013), program completion has been a worry of students as well as an interest of all institutions offering graduate programs, graduate student advisors/supervisors, and graduate program creators (Andama, 2020; Raju & Schumacker, 2015). The long time to obtain a Ph.D. degree has been a source of contention (Skopek et al., 2022), and graduate schools worldwide are working to reduce the long time to degree (Geven et al., 2018). This has affected poor and developed countries (Abiddin & Ismail, 2011; Anguino, 2010). Ph.D. students seek Doctoral degrees and get theoretical and practical knowledge (Ssenyonga & Nakiganda, 2020). They grow into independent and critical thinkers capable of conducting high-quality research and innovation (Jowi, 2021); become professors for the nation's colleges (Bok, 2015); establish university-industry relationships; transfer knowledge between universities and industry (Kasozi, 2019); and play an important role in firm-university network configurations (Thune, 2009). A developing process is required because Ph.D. students join doctoral education without 'doctoral-level thinking' (Holbrook et al., 2014). As a result, university induction workshops must be more specific about the task and experience standards, underlining how Ph.D. students can be supported in their learning to detect and manage problematic situations (Holbrook et al., 2014). This is because completion rates serve as a performance indicator (OECD, 2012), as does the quality of the student experience (Motseke, 2016). Completing a Ph.D. programme is also assumed to be a great achievement for the graduate, the institution of higher learning attended, the academic profession, and the country in the form of the economy (Japheth et al., 2023).

Nonetheless, the time required to obtain a doctoral degree has been a source of contention (Skopek et al., 2022), and graduate schools worldwide are working to reduce the time required to finish the Ph.D. degree (Geven et al., 2018). Almost half of Ph.D. students drop out before graduation, causing unimaginable economic problems, innumerable gaps in research, and low completion rates (Kasozi, 2015; Rockinson-Szapkiw et al., 2019; Ssenyonga & Nakiganda, 2020). Graduate school stress can result in social isolation and failure to complete, particularly if the student fails to adjust or integrate into the university system (Ssenyonga & Nakiganda, 2020). Given the glaring concerns of low publication levels and low completion rates (Bisaso, 2017; Ssenyonga & Nakiganda, 2020; Jowi, 2021), this study examined individual characteristics as predictors of program completion of Ph.D. students at Makerere University, Uganda's flagship university.

Graduate completion rates in Uganda were 38% (Hayward & Ncayiyana, 2014; Wamala & Oonyu, 2012). Specifically, completion rates in Makerere are low (Japheth et al., 2023), which has continuously overwhelmed programmes and the university (Ssegawa & Kalabamu, 2020; Padro et al., 2008). According to Muriisa (2015), 50% of students who enroll for doctoral programs in African universities, not excluding Uganda, fail to complete their Ph.D. studies in the allocated time. This was re-echoed by Prof. Mukadasi, Director of the Directorate of Graduate Research and Training at Makerere University, on 6th March 2020. In his address during the DAAD AUGA workshop on postgraduate completion and research output, the Professor noted, "... besides the significant role in generating research outputs to drive development, completion rates of postgraduates remain unsatisfactory" (Japheth et al., 2023) page 4. This requires a detailed

examination of the graduate education process for a Ph.D. in Uganda, where students are admitted to several Ph.D. programmes at public and private universities (National Council for Higher Education, 2018). Furthermore, in Uganda, the number of Ph. D. required in education and other industries is lower (Kasozi, 2019). Makerere University, in particular, is where all new universities in Uganda go for academic staff (Kasozi, 2019).

At Makerere University, Ph.D. students enroll in Ph.D. programs with the goal of finishing in three to four years (Malunda et al., 2021; Makerere University, 2020; Makerere University Doctoral Supervision Guidelines, 2016) to meet the growing demand for graduate training (Bok, 2015; Nakanjako et al., 2014). However, while the number of admissions is high, the number of students who graduate on time is low (Ssenyonga & Nakiganda, 2020). Ph.D. students at Makerere University lack systematic induction into academia and structured and intentional mentoring and support (Anderson & Anderson, 2012). There are few insights into how distinct social networks, such as participation in informal and formal networks, affect various aspects of social integration throughout students' stay in the university (Nareeba et al., 2019). Nonetheless, there is a nationwide demand for Makerere University Ph.D. holders to staff new Ugandan universities (Kasozi, 2019). Despite studies on completion (Jowi, 2021; Ssenyonga & Nakiganda, 2020; Wamala et al., 2011; 2012; Waweru & Kyakuha, 2020), there was a need to investigate program completion predictors generally (Stubb et al., 2011) and especially in Uganda's setting. As a result, a study was conducted to examine individual characteristics as predictors of program completion of Ph.D. students at Makerere University. Tinto's (1975) model proposed that the following individual characteristics can predict Ph.D. completion: socioeconomic status (SES), quality of family relationship, study-family balance, expectations, self-efficacy, grit, writing, and prior experiences.

Purpose of the Study

This study aimed to examine individual characteristics of social and academic integration as predictors of program completion of Ph.D. students at Makerere University.

RELATED LITERATURE

This section presents the theory underpinning the study and related literature review. The theory describes the linkage between individual characteristics and program completion of Ph.D. students. The related literature shows the individual characteristics that are predictors of program completion in universities while identifying gaps that were filled by this study.

Theoretical Review

This study was guided by Tinto's Model of dropout/persistence. This Model assumes that persistence is predicted by matching a person's characteristics and the institution's social and academic systems (Tinto, 1975). Based on Tinto's Model, predictors are defined as individual characteristics. Individual characteristics might be one's features (Hamidu et al., 2015), manner of life (Geeslin & Guijaro-Fuentes, 2005), influences (Daryanto, 2014), or qualities. Based on Tinto's Model, individual characteristics were conceptualised as social and economic status, relationship with family, study-family balance, expectations, grit, self-efficacy, writing, and prior experiences. According to Tinto's Model, program completion was defined as publication and graduation. Publication is the process of putting the results of one's study into the literature after they have been examined by one or more referees (who are academics in the same field) to ensure the content's acceptability and prevent plagiarism (Kaur, 2013). Graduation is the number of students in a cohort who complete and/or progress from an institution (Noel-Levitz, 2008).

Much as Tinto's Model was used in many studies, it has been criticised for making assumptions about how students make dropout decisions without consulting any students to see if these

assumptions are correct and for not being applicable in poor nations (Mannan, 2007). These criticisms have had little impact on persistence research, and Tinto's Model continues to dominate (Brunsden et al., 2000). The research community broadly accepted Tinto's Model (Schreiber et al., 2014; Longden, 2004); even those who criticised it (Braxton et al., 1997) saw it as a good working theory and preferred adjustments and adaptations to dismissing it. As a result, it remains the most important Model of persistence because it allows for active testing. As a result, several empirical research have been conducted, the findings of which have mainly supported it (Brunsden et al., 2000). Using its assumptions, the study was applied among Makerere University Ph.D. graduates while examining individual characteristics as predictors of program completion of Makerere University Ph.D. students.

Empirical Review

Individual Characteristics and Program Completion

According to Tinto's (1975) model, constructs for individual characteristics that can predict Ph.D. completion include socioeconomic status (SES), quality of the family relationship, study-family balance, expectations, self-efficacy, grit, writing, and prior experiences.

Regarding social-economic-status (SES), income, education, occupation, family affluence, physical possessions, social position, social involvement, power, and political influence are all factors that determine one's SES. SES might be high, moderate, or low (Deinde et al., 2020; Gaur, 2013). The lower the student's social-economic-status, the worse their academic achievement (Chen, 2018). Indeed, evidence suggests that college persisters are more likely to come from homes where the parents are more educated, urban, and affluent because they encourage their children to follow in their footsteps, and therefore, such students are more likely to graduate (Ishitani 2006; Petty, 2014). While students from low socioeconomic status (LSES) backgrounds

experience barriers to accessing higher education, when undertaking their higher education through to completion, these students' academic outcomes are comparable to students from higher SES backgrounds (Macaulay et al., 2023). However, students from LSES backgrounds experience such unique challenges as lack of cultural capital (i.e., know-how'), financial problems, health problems, family issues, and relationship issues while studying. Subsequently, while the academic outcomes of LSES background students are comparable to students from higher SES backgrounds, the unique challenges these students may face can lead to high attrition rates, Macaulay concludes. White (1982) discovered a positive connection between SES and academic success. This contrasted with the findings of a meta-analysis conducted by Sirini (2005), whose study revealed that the size of the association between SES and academic achievement was not as strong as that shown by White (1982). However, both meta-analyses found that the SES-academic achievement link significantly deteriorated over time (Chen et al., 2018).

Several studies (Nachinaab & Alexander, 2019; Andama, 2020; Bhatia, 2012) have examined the quality of the relationship with family in predicting Ph.D. program completion. For instance, Nachinaab & Alexander (2019) and Andama (2020) revealed that support and encouragement from spouses lead to the motivation graduate students need to integrate and persist until program completion, contradicting the current study findings. Family is the context in which one learns to use one's faculties to comprehend and cope with the physical world. In the family, we receive education, develop life values, and gain the strength required to become individuals (Bhatia, 2012). Bhatia further revealed that those content with their personal lives find it simpler to achieve professional success. Aside from the relationship with one's family, a Ph.D. student must balance his or her studies with the demands of the family.

Study-family balance (SFB) is a state in which an individual manages real or potential conflicts between different situations that he or she

encounters in either the study or family spheres (O'Mahony & Jeske, 2019). Study and family are the two most important life domains that are interdependent and affect academic achievement. Engagement in one is detrimental to the other. It is sometimes associated with negative outcomes such as family dissatisfaction, difficulties at work, work dissatisfaction, higher distress, and inter-role conflict, concluding that work and family role pressures are mutually incompatible (Loscalzo et al., 2019; Greenhaus & Powell, 2006). To avoid guilt and anxiety, O'Mahony and Jeske (2019) revealed that SFB necessitates social support, the ability to communicate, activity re-arrangement to accommodate conflicting activities, and staying in touch with family. The main conclusion in the study by Cataldo et al. (2023) was that study-family conflict, given remote learning, affects students' academic performance. This was supported by Parveen (2007) whose study revealed that home environment in the form of family size, family type, birth order, family relations, and family SES had a significant effect on the academic achievement of students. To avoid harming either of the components, special attention must be paid to the SFB. Aside from family, anybody who enrolls in any type of academic program expects something at the end of the program, no matter how insignificant.

Expectations are one's assumptions about what will happen in response to or as a result of their candidature (Holbrook et al., 2014). Expectations can influence how students respond to the learning environment (Holbrook et al., 2014). The labour market circumstances that students expect to find affect Ph.D. students' retention significantly, with high predicted salaries driving them to the final stages of their programs (Ampaw & Jaeger, 2011). Holbrook et al. (2014) discovered that unmet expectations by Ph.D. students can lead to dissatisfaction and dropout in their studies. Spaulding and Rockinson-Szpkiv (2012) discovered in a qualitative study that there were professionally motivated reasons for earning a doctorate, including increased marketability, credibility, and compensation, opening up career opportunities such as being an

administrator, career progression to full professorship or promotion. Carpenter et al. (2004) found out that students' self-expectations affect academic achievement, and they are enthusiastic and confident about graduating from graduate school. Such expectations may motivate candidates to persevere until they attain their objectives. However, because Ph.D. studies rely heavily on one's dedication and hard work, students' self-efficacy must be considered.

Self-efficacy is defined as the ability and determination to address challenging research-related problems by working hard enough (Bandsman-Dieters, 2013); or as an individual's recognised skills for learning and accomplishing desired goals, as well as one's confidence in effectively doing tasks related to conducting research (Sverdlik et al., 2018). A happy mind set strengthens one's perception of efficacy, whereas a feeling of sadness undermines one's efficacy. The stronger the students' potential for self-efficacy, independent learning, and social support, the more likely they are to persist. Students with poor self-efficacy perceive responsibilities to be more difficult than they are (Hadi & Muhammad, 2019). Kundu (2020) discovered that children with high self-efficacy are more resilient in the face of adversity, have greater academic performance and accomplishment, increased confidence, and are more engaged than those with low self-efficacy. This is due to the fact that self-efficacy has an impact on one's thoughts, feelings, and motives. It determines the amount of work and the level of quality (Kundu, 2020). Self-efficacy influences faculty during supervision because those with high self-efficacy use innovative approaches, engage students more, aim to create a desired change among learners, and are more committed than those with low self-efficacy (Kundu, 2020). Apart from self-efficacy, the literature also reviewed studies on grit and program completion.

Grit is defined as working persistently and passionately towards a difficult goal without giving up over time, despite failure, setbacks, and difficulties (Christopoulou et al., 2018). Long-term goals require a combination of enthusiasm

and perseverance (Hudson et al., 2020). Passion is defined as an overwhelming attraction towards a self-defining activity that one enjoys (or loves), considers important, and invests a large amount of time and energy in (Ruiz-Alfonso & Leon, 2016). When emotions are in control, it is a favourable variable (Gómez-Salgado et al., 2019). Perseverance, on the other hand, is the ability to strive persistently towards problems, retaining effort and interest over time despite failure, hardship, and progress plateaus (Littman-Ovadia & Lavy, 2016; Christopoulou et al., 2018). A Ph.D. student with high perseverance not only invests greater energy in a specific work at a given time but also does so with consistent stamina across time in pursuit of long-term goals (Littman-Ovadia & Lavy, 2016). Galaleldin and Anis (2019) discovered that grit was highly associated with higher grades, class involvement, and a wide range of both academic and non-academic achievements. This is because hardworking Ph.D. students used stamina, kept on track, had a stronger sense of belonging, displayed better self-control, mental well-being, life satisfaction, a sense of value, resilience, and a growth mindset, and achieved their objectives. However, the findings of Christopoulou et al. (2018) differed from those of Littman-Ovadia & Lavy, 2016). They discovered that grit had a weak to moderate link with education, which was later validated by Galaleldin and Anis (2019), who discovered that students' grit levels were not statistically significant predictors of students' assessment results. Ph.D. students with poor grit, on the other hand, became bored and disillusioned and either gave up or selected alternative actions (Christopoulou et al., 2018). Grit is a substantial predictor of persistence through graduation, and it is closely related to writing as another construct for predicting completion by individual characteristics.

Writing is a way to participate in and become a part of a scientific community and culture (Lonka et al., 2014). Writing assists Ph.D. students in framing their arguments and using their own linguistic specialisation while adhering to tight disciplinary rules and regulatory conventions

(Lonka et al., 2014). Postgraduate study necessitates a strong knowledge of English as a formal scientific communication medium in the educational setting. Ph.D. students with insufficient English language abilities are more likely to struggle with explaining their research ideas, despite the fact that writing ability predicts postgraduate success (Ssenyonga & Nakiganda, 2020). Ayiro and Sang (2011) discovered that Ph.D. students struggle with writing academic English, which causes them to fall behind in their studies. Students are anxious about presenting results in written form since writing causes people to think about their work in a new way (Phillip & Pugh, 2007). This is consistent with the findings of Lonka et al., 2014, who stated that Ph.D. students may feel threatened by a variety of critics, leading to procrastination, perfectionism, and writer's block. Procrastination is the tendency to fail to begin things that are critical to success. It is a type of self-regulation failure that is common in academic work (Lonka et al., 2014).

Perfectionism is defined as a person's continual insistence on a perfect result by reworking material until it is free of all flaws or eventually abandoning the attempt (Lonka et al., 2014). Writer's block, on the other hand, is defined as the inability to write productively as a result of failure fears, internal edits, early negative experiences, procrastination, poor mental health, rigid rules, premature editing, and the writer's limited range of strategies to cope with complexity rather than a lack of literacy skills or intellectual capacity (Lonka et al., 2014). Ph.D. writing adheres to a specific scientific writing style. This establishes the expected standard and organisation, as well as standards for scholars to follow in their scholarly work while interacting with the scientific community. These include, among other things, the required structure, citation style, and research ethics (Ssenyoga & Nakiganda, 2020). According to Spengler et al. (2018), writing skills measured in childhood were positively correlated with educational attainment and occupational prestige. Program completion is not only predicted by writing but also by one's prior experiences.

Past educational experiences are major indicators of future university achievements (Tinto, 1975). Attending workshops, engaging in research projects, interacting with faculty, and formal teaching experiences, such as working as a tutor or a teaching assistant during a master's degree program, are examples of previous educational experiences (Austin, 2002; Hathaway et al., 2002; Nesheim et al., 2006). Formal teaching experiences have an impact on graduate student persistence. For example, a research assistantship allows students to connect with people in the department, allowing them to create meaningful relationships. The number of hours a graduate student spends talking with faculty outside of class, working on a professor's research project before joining graduate school, and having their class papers assessed by faculty all have an impact on graduate degree aspirations (Hathaway et al., 2002).

According to Hathaway et al. (2002), students who participate in an undergraduate research opportunity programme (UROP) have higher retention rates and academic accomplishment than those who do not, as well as being much more likely to pursue Ph.D. programs and research-related activities. Austin (2002) conducted research in support. It was discovered that many participants reported having confidence in their capacity to conduct studies, frame research questions, and write for publication as a result of their research experience. This was backed up by Anderson & Anderson (2012), who observed that when students participate in several research projects with various faculty members, they gain greatly in research since it prepares them for their dissertation. In a similar vein, Ampaw and Jaeger (2011) concluded that research assistantships had the highest likelihood of degree completion. However, the preceding investigations left some methodological and contextual gaps. All of the studies were conducted in the United States (Austin, 2002; Hathaway et al., 2002; Ampaw & Jaeger, 2011). Undergraduates were employed as the unit of analysis by Hathaway et al., 2002. Methodologically, Austin (2002) and Hathaway et al. (2002) employed qualitative methods, whereas

Ampaw & Jaeger (2011) used quantitative approaches.

Nonetheless, many of the earlier studies were conducted outside of Makerere University, for instance: India (Bhatia, 2012); China (Chen et al., 2018); Australia (O'Mahony & Jeske, 2019); Nigeria (Nachinaab & Alexander, 2019); Busitema University (Sennyonga and Nakiganda, 2020; Andama, 2020). Some were conducted with both high school students and university students (Christopoulou et al., 2018), while others were exclusive to Nursing schools (Gómez-Salgado et al., 2019) and Engineering courses (Galaleldin & Anis, 2019). This contextual gap necessitated a study to be conducted in Makerere University. The study, therefore, tested the following hypotheses:

H1: Social-economic-status predicts program completion.

H2: Quality of relationship with family predicts program completion.

H3: Study-Family Balance predicts program completion.

H4: Expectations predict program completion.

H5: Self-efficacy predicts program completion.

H6: Grit predicts program completion.

H7: Writing predicts program completion.

H8: Prior experiences predict program completion.

METHODOLOGY

The methods that served as the guide for the study investigations were given in this section. They facilitated data collection and analysis about individual characteristics and program completion of Ph.D. students in Makerere University. Program completion predictors were so complex that replies that could go beyond basic numbers or words were necessary (Creswell & Clark, 2017). As a result, to collect both objective and subjective knowledge, quantitative and qualitative

approaches were required (Creswell & Creswell, 2018; Creswell & Clark, 2017). A convergent design was used in this study. Specifically, cross-sectional and hermeneutic phenomenological designs were used to collect quantitative and qualitative data, respectively. Hermeneutic approaches sought to comprehend the meaning of experience by searching for themes and engaging in interpretive interaction with the collected data (Singh, 2018). The cross-sectional design collected data from many different individuals at a single point in time and observed variables without influencing them. The design was appropriate because it permitted the use of a self-administered questionnaire during data collection (Wang & Cheng, 2020).

In triangulation, data was collected utilising a convergent parallel mixed research technique. Data triangulation was done to support or contradict each other. The two strands' results were merged at the interpretation level, and then the convergence, divergence, contradictions, or links between the two data bases were determined (Creswell & Clark, 2017). The findings were detailed and reliable. This precisely addressed the research questions indicated previously. The study population comprised 236 Ph.D. graduates from Makerere University's four colleges of Soft Applied, Soft Pure, Hard Applied, and Hard Pure who graduated between 2018 and 2022. The four colleges were determined using Biglan's (1973) classification of academic disciplines.

Ph.D. graduates were chosen because they had been at graduate school and consequently shared their Ph.D. life experiences. Using the table of sample size determination by Krejcie and Morgan (1970), the quantitative sample size comprised 104 Ph.D. graduates. The sample from each of the colleges was then calculated, therefore getting 34 from Soft Applied, 40- From soft pure, 49 – Hard Applied, and 21 from Hard Pure. However, out of the sample size of 144, 104 respondents actually filled the SAQ, which gave a response rate of 0.72 (72%). This response rate was considered adequate because Nulty (2008) suggested that a response rate of (50-70%) is adequate. The sample size of qualitative data was made of seven (7)

participants: Angella, Andrew, Brian, Bridget, Charity Charles and Daniel who were picked until a point of saturation was reached (Gentles et al., 2015).

Measures of the Independent Variable

The measures of the independent variable – individual characteristics were: SES (Macaulay et al., 2023; Nachinaab & Alexander, 2019), quality of relationship with family (Nachinaab & Alexander, 2019), studies-family balance (Nachinaab & Alexander, 2019), expectations (Nachinaab & Alexander, 2019), self-efficacy (Ssenyonga & Nakiganda, (2020); Chritopoulou et al., (2018), grit (Ssenyonga & Nakiganda, (2020); Chritopoulou et al., (2018), writing (Ssenyonga & Nakiganda, (2020); Vaquera, (2007); Chritopoulou et al., (2018) and prior experiences (Austin,(2002); Hathaway et al., (2002); Ampaw & Jaeger, (2011). For the measures of program completion, the dependent variable was: publication (Ssenyonga & Nakiganda, 2020) and graduation (Padro et al., 2008). The indicators of the measures were attached to a five-point scale with 1= Strongly Disagree, 2= Disagree, 3= Undecided, 4= Agree, and 5= Strongly Agree. The attachments enabled the collection of data agreeable with quantitative analysis. The qualitative measures were represented by the voices of the participants.

Both quantitative and qualitative methods were used to collect data. Surveys were used to obtain large amounts of quantitative data from Ph.D. graduates at a low cost (Sukamolson, 2007) in order to examine non-observable qualities such as grit, self-efficacy, and expectations (Artino et al., 2018). They adopted the form of self-administered questions (SAQs), which all respondents easily comprehended. The questionnaires were either physically delivered to the respondents' homes or forwarded to them via email or WhatsApp. The non-observable in-depth qualitative data (Creswell & Creswell, 2018) was acquired through interviews that captured the voices of participants, allowing meaning to be deduced beyond words. Following their permission, responses were recorded in a note

book and on a tape recorder. The questions posed were specific and relevant to the study's objectives. Interviews were performed by either personally meeting participants in their places of work or calling them on the phone.

The collected data were coded, entered into the computer using SPSS, and displayed using frequency tables for editing. Having used a mixed methods approach (MM), MM methods of data analysis were used to analyse data. Specifically, quantitatively, data analysis was done in univariate, bivariate, and multivariate. Data analysis at the univariate level involved the calculation of means. At the bivariate level, correlation analysis was carried out by relating the predictor (individual characteristics) variable with the dependent variable (program completion). The dependent variable was regressed on the different individual characteristics constructs namely SES, quality of family relationship, study-family balance, expectations, self-efficacy, grit, writing, and prior experiences at a multivariate level. On the qualitative side, participants' voices were transcribed, putting voices with similar meanings together that formed themes. The themes were later put in a joint display table side-by-side with quantitative results and were interpreted.

RESULTS

The quantitative results were presented in this section first at the descriptive level and subsequently at the inferential level based on hypotheses. The qualitative results were presented concurrently with the quantitative results, whereby voices that were in line with a particular hypothesis were reported under that particular hypothesis.

Demographic Characteristics

The results of the demographic characteristics revealed that the model percentage of the Ph.D. students of males was 63.5% while the females were 36.5%. Concerning sponsorship, those sponsored were the majority, with 76%, and the remaining 24% were on self-sponsorship. In terms of age, those who were 40 but below 50 years were 51% (majority percentage), followed by 25% who were 50 years and above, and the remaining 24% were up to 40 years. Regarding marital status, the majority were married 88.5%, while equal percentages of 5.8% comprised the single never married and the divorced ones. Regarding colleges, the biggest percentage of the graduates were from the Hard Applied College (28.8%), followed by Soft Applied (27.9%), then Soft Pure (26%), with Hard Pure having the lowest percentage 17.3%. In terms of the number of years spent on the program, the majority of the Ph.D. students had spent up to 4 years 39.4%, followed by those who had spent 4-5 years 36.5, then 6-7 years 16.3, with the least being those who spent 8 years and above 7.7%. Regarding the type of program, the majority (70.2%) had done Ph.D. by research, while 29.8% had done Ph.D. by coursework and dissertation. The demographic characteristics represented the views of Ph.D. graduates from Makerere University.

Program Completion

Program completion was studied as a concept comprising publication and graduation. *Table 1* presents the means derived from the descriptive analysis of the data on the same.

Table 1: Descriptive results for program completion

Program Completion		Item Mean
Publication (overall mean = 3.9)		
I was able to identify peer-reviewed journals for publication as guided by my supervisors.		4.2
My supervisors guided me on how to prepare acceptable manuscripts for publication.		4.1
I was able to easily send articles that complied with acceptable publication standards.		4.0
I was able to raise publication fees.		3.5
I presented the conference paper(s) with ease.		3.8
I published in peer-reviewed professional journals with ease.		3.7

I presented a seminar paper.	3.7
Graduation (overall mean = 3.9)	
I was allocated supervisors at the right time	4.4
I presented my proposal before the doctoral committee on time.	3.8
I submitted my proposal for the examination in time.	3.7
I was able to defend my proposal in the school of higher degrees in time.	3.6
I attended graduate school seminars.	4.1
The thesis examination process was fair.	4.2
I did not wait for long for my marked dissertation to be returned.	3.5

Source: Primary data

The results in *Table 1* suggested that Ph.D. students rated their program completion as high (overall mean of both publication and graduation = 3.9, which corresponded to agreed). Both means were close to code 4, representing agreed on the five Likert scale used. This suggested that the Ph.D. students indicated that their program completion was high or good. The quantitative results, however indicated mixed feelings from participants. For instance, concerning publication, some indicated that *"I would spare from my meagre resources to pay. I paid for two publications"* [Charles]. Students had to seek assistance from their supervisors much as some seemed not very helpful. A participant observed that *"It was only my supervisors from the university abroad that assisted me, but those of Makerere did not even read any of my manuscripts"* [Andrew], while another noted that *"I did it on my own, I looked for journals, looked out for opportunities for conferences, and presented"* [Charity]. There are those, though, who noted assistance from supervisors at Makerere, as represented by a participant who noted that *"I received a lot of support from my supervisors, and I would also prepare the manuscripts and take them to the supervisor to read"* [Angella].

Regarding graduation and program completion, the responses revealed that there were quite a number of delays in the allocation of supervisors, especially in the Soft Applied colleges, proposal writing and examination, examining and returning the final marked Dissertations, and delays with ethical committee clearances. There were difficulties in putting the dissertation together, examining it, defending it, and making corrections

took time. One participant indicated that *"the external examiner took 13 months to mark my dissertation, the internals had finished marking within less than 3 months, and I waited for 3 weeks to defend"* [Charles].

Individual Characteristics

Individual characteristics were studied using eight constructs: SES, quality of family relationship, study-family balance, expectations, self-efficacy, grit, writing, and prior experiences. *Table 2* presents means derived from the descriptive analysis of the data on the same.

Table 2: Descriptive results for individual characteristics

Individual Characteristics	Item Mean
SES (overall mean = 3.5)	
I had a good job while undertaking my Ph.D. program.	3.7
I could afford to pay for my Ph.D. program with ease.	2.8
My living conditions were conducive.	3.4
I had access to utilities such as water, internet, and electricity while undertaking my Ph.D..	4.0
Quality of Relationship with Family (QRF) (overall mean = 3.8)	
My family encouraged me to complete my Ph.D..	4.2
My family members provided the help I needed to complete my Ph.D..	4.0
My family participated in my Ph.D. activities, like typing my work.	2.2
My family member was there whenever I needed them.	3.8
My family understood the dynamics of being a mature student.	3.7
Studies – Family Balance (overall mean = 2.6)	
The demands of the studies did not interfere with family.	2.5
The demands of my family did not interfere with my studies.	2.6
The time required for my studies did not interfere with my family.	2.4
The time required for my family did not interfere with my studies.	2.4
The activities of my family did not interfere with my studies.	2.6
My studies reduced my energy to be a parent more than I expected.	3.2
Because of my studies, I often failed to take part in family activities.	3.2
Because of family responsibility, I almost gave up my Ph.D. program.	2.0
Expectations (overall mean = 4.0)	
Graduate school provided an opportunity to achieve my future goals.	3.6
Pursuing a Ph.D. would enable me not to be excluded from by colleagues	3.6
Pursuing a Ph.D. would make me succeed professionally in the future.	4.5
Completing a Ph.D. would increase the possibility of a stable job in the future.	4.3
Pursuing a Ph.D. would enable me to participate in student exchanges, spending some time of the program in another country.	3.8
Self-efficacy (overall mean = 4.4)	
I was confident that I would deal efficiently with unexpected events during my Ph.D. studies.	3.8
I believed I would achieve my goal of completing my Ph.D. program.	4.5
I believed I would always manage to solve difficult problems if I tried hard enough.	4.3
I felt that my abilities would enable me to do my Ph.D. studies very well.	4.4
When facing difficult tasks, I was certain that I would accomplish them.	4.2
I was committed to graduating from graduate school no matter the circumstances.	4.7

Individual Characteristics	Item Mean
My past accomplishments increased my confidence that I would graduate from graduate school.	4.5
Even when the program got tough, I continued with it.	4.7
Grit (overall mean = 4.4)	
I set long-term goals for myself.	4.3
Once I set a goal in the university, I tried to overcome any challenges that arose.	4.3
I worked toward my academic goals no matter how long it took to reach them.	4.5
I was a diligent student.	4.4
I focused on my studies instead of getting involved in fun.	4.3
I maintained my focus even when the projects took longer time to complete.	4.5
Writing (overall mean = 2.6)	
I found it easier to express myself in other ways than writing.	2.9
I often postponed writing tasks until the last moment.	2.3
I found it difficult to start writing.	2.6
Writing was difficult because the ideas I produced seemed stupid.	2.1
I found it difficult to hand over my texts because they never seemed complete.	2.1
Whenever I wrote, I was concerned about whether the reader understood my text.	3.3
Prior Experiences (overall mean = 3.6)	
Working as a Tutor helped me to gain research skills.	3.5
Attending workshops during my Masters helped me to gain experience, which was helpful during my Ph.D. program.	3.7
Participating in a research project before my Ph.D. program encouraged me to complete my Ph.D. degree.	3.8

Source: Primary Data

Table 2 shows that Ph.D. students rated the various individual characteristics indicators differently by indicating that SES (mean = 3.5), prior experiences (mean = 3.6), quality of relationship with family (mean = 3.8), expectations (mean = 4.0), self-efficacy (mean = 4.4), and grit (mean = 4.4) were good because their means were in the range of code 4 which represents agree. However, the Ph.D. students rated writing and study-family balance (with mean = 2.6) as fair since their means were in the range of code 3, representing un decided or moderately agreed on the five-point Likert scale used.

The qualitative findings confirmed the quantitative ones. Participants' voices are as captured below:

"It takes individual discipline to complete a Ph.D. program because I have seen sponsored students failing even when the finances were available which could cater for their families and the Ph.D. activities" [Daniel].

"Ph.D. is not about how bright, or how rich one is, but it is about one's attitude and that of the supervisor" [Brian].

Ph.D. completion takes more than SES. No matter how rich or poor a Ph.D. student may be, his/her completion takes more than their SES. When it came to QRF, participants said: *"My wife was supportive. I could go out of the country for six months and come back"* [Andrew]. And then also, *"Family members were very supportive, especially the children and the spouse"* [Brian].

Not only those but also, *"If family had not supported me, I wouldn't have completed this program"* [Angela]. To others, family members would somehow reluctantly not support because eventually, the Ph.D. student would be like a defendant to the family. For instance, one participant noted that,

"For us the married ones, you had now to compromise haaaaaaa. It really caused an imbalance because, sometimes, I would come

back; I want to complete some write-up, the family wants to talk to me, but I am busy with my papers!" [Charles].

Regarding SFB, a lot was said: "I got time to work on most of my work, which had to be updated regularly" [Charity].

However, to the majority, the time for family was not enough because they would dedicate more time to Ph.D. than family as one lamented that,

Well, at several points, I regretted why I re-registered because, remember, earlier alone, I had given up because the time required for my family was very much limited because of Ph.D. related activities. Studies interfered with my family activities. And the family also interfered with my study activities. Studies mostly interfered with family because of sickness [Charles].

"The fact did I did my Ph.D. while I was lecturing at the University, I was pushed because survival in the university where I was working required one to have a Ph.D." [Charles].

To others, they were completely different expectations. Such voices came up:

I did not expect any promotion since I was already at the ceiling of my job. My job only requires a maximum of a Master which I already had. However, because Makerere is aiming at being research-led university, the university was giving me Ph.D. students to supervise, yet I had a Master. I therefore thought it wise to have a Ph.D. to easily guide and to avoid being under looked by my supervisee, [Brian].

Concerning expectations, Ph.D. students still had mixed feelings:

Much as I knew what I was doing practically, my supervisees would under look me the moment they discovered that I had no PhD. They would consult other colleagues to approve of what I would tell them during

supervision. But to their disappointment, they would still be referred back to me [Brian]

Then,

I did the Ph.D. for my father, who was a professor in the university. My father forced me to do a Ph.D. and I wanted to make my dad happy. However, latter, I felt misplaced when people started calling me doctor yet I was not even working in the university. I am thinking of re-joining the university because I see myself more drawn to research and lecturing [Charity].

Evidence therefore shows that, all participants had varying ideas on all indicators of the individual characteristics.

Correlation between Individual Characteristics and Program Completion

To find out whether there was a correlation between program completion and individual characteristics, i.e., to test the first 8 hypotheses (H1-H8) in this study, correlation analysis was carried out. The 8 individual characteristics considered included: Socioeconomic status (SES), quality of relationship with family (QFR), studies-family balance (WFB), expectations (E), self-efficacy (SE), grit (GR), writing (W) and prior experiences (T). The results were given in *Table 3*.

The results in *Table 3* suggested that five of the eight individual characteristics were significant positive correlates of program completion ($p \leq 0.05$) except for quality of relationship with family, studies-family balance, and writing ($p \leq 0.05$). Therefore, at preliminary level, hypotheses H1, H4, H5, H6 and H8 were supported whereas H2, H3 and H7 were not.

Table 3: Correlation of program completion and individual characteristics

	Program Completion	SES	QFR	WFB	E	SE	GR	W	T
Program Completion	1	0.338**	0.007	-0.080	0.377**	0.434**	0.430**	-0.164	0.387**
SES		0.000	0.945	.0417	0.000	0.000	0.000	0.096	0.000
QFR			0.210*	-0.017	0.225*	0.225*	0.243*	0.055	0.115
WFB			0.032	0.868	0.022	0.021	0.013	0.580	0.247
E				1	-0.032	-0.097	0.071	-0.004	-0.105
SE					0.750	0.326	0.284	0.475	0.289
GR						1	-0.149	0.065	-0.161
W							0.127	0.510	0.103
T							0.407**	-0.158	0.290**
							0.000	0.110	0.003
							1	-0.179	0.108
							0.000	0.069	0.276
							1	-0.298**	0.091
								0.002	0.357
								1	-0.121
									0.223
									1

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

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

Regression of Program Completion on Individual Characteristics.

At the confirmatory level, to ascertain whether individual characteristics predicted program completion, therefore testing the 8 hypotheses (H1-H8) in the study, the dependent variable

program completion was regressed on the individual characteristics. The individual characteristics were social –economic status, quality of relationship with family, studies – family balance, expectations, self-efficacy, grit, writing, and prior experiences. The results are presented in *Table 4*.

Table 4: Regression of program completion on individual characteristics

Individual Characteristics	Standardised Coefficients B	Sig. p
Social Economic Status	0.191	0.032
Quality of relationship with Family	0.015	0.862
Studies Family Balance	-0.002	0.984
Expectations	0.099	0.295
Self-Efficacy	0.197	0.087
Grit	0.186	0.104
Writing	-0.032	0.705
Prior Experiences	0.296	0.001
Adjusted R ² = 0.336		
F = 7.523, P = 0.000		

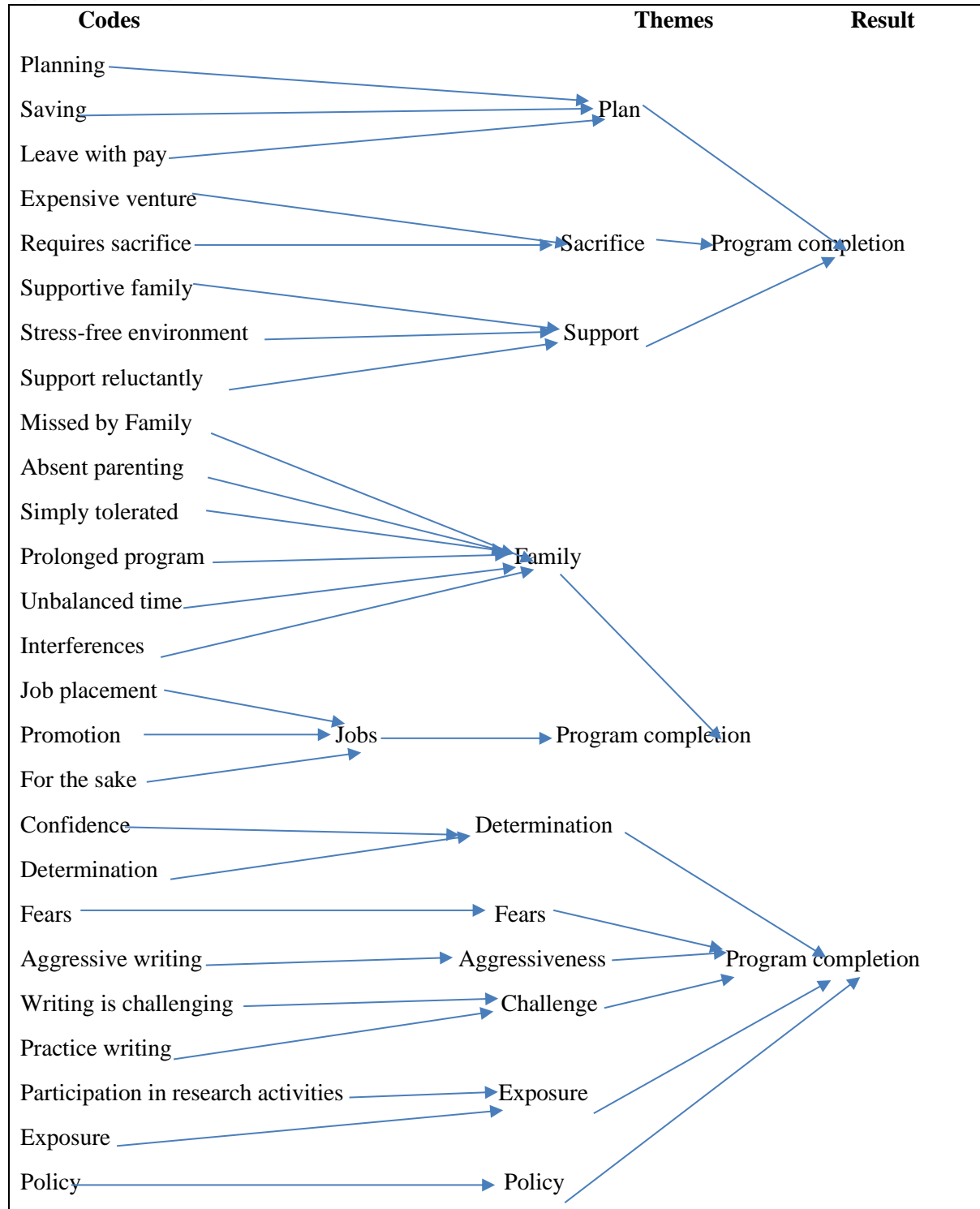
The results in *Table 4* show that the 8 individual characteristics explained 33.6% of the variance in program completion (adjusted R² = 0.336). This means that 66.4% of the variation was accounted for by other factors not considered in the study. The regression model was significant (F = 7.523, p = 0.000 ≤ 0.05). Out of the eight individual characteristics, only two, namely, Socioeconomic status (β= 0.191, p= 0.032 ≤ 0.05) and prior experiences (β= 0.296, p = 0.001 ≤ 0.05), positively significantly predicted program completion. Therefore, hypotheses H1 and H8 were supported. The rest of the individual characteristics, namely, quality of relationship with family, studies – family balance, expectations, self-efficacy, grit, and writing, did not significantly predict program completion. Therefore, hypotheses H2, H3, H4, H5 H6 and H7 were not supported. The levels of the respective betas implied that prior experiences were the most significant predictor of program completion followed by social – economic status. Having analysed the Individual Characteristics as predictors of Program Completion at Makerere University quantitatively, the study now turns to qualitative analysis using Thematic Analysis as

earlier indicated in the methodology section. This is illustrated in *Table 5*.

Table 5: Analysing individual characteristics as predictors of program completion using interview extracts, which resulted in codes

Interview Extracts	Codes
<i>I had planned well in advance for money. I had saved money for at least the first two academic years. I was on study leave with full pay and was on sponsorship. Ph.D. is an expensive venture which drains the resources. I had to sacrifice.</i>	Planning Saving Leave with pay Expensive venture Requires sacrifice
<i>My family was very supportive, especially my husband. If my family had not supported me, I would not have completed this program. The family members gave me a stress-free environment and even contributed finances for her. The family was supportive, and much as the family was supportive, they would also somehow reluctantly not support because eventually you are like a defendant to the family.</i>	Family was supportive Stress-free environment Reluctantly support
<i>I had a young family, and everyone missed me. They simply had to tolerate me. I had to put off certain family commitment. I became an absent parent. Because the Ph.D. program was very much prolonged, I did not feel the family pinch. The time for family was not enough because. I would dedicate more time to Ph.D. than family. Well, at several points, I regretted why I re-registered because remember earlier alone. Studies interfered with my family activities. The family also interfered with my study activities</i>	Missed by family Absent parenting Simply tolerated by family Prolonged program Unbalanced time between Ph.D. and family Interferences
<i>I wanted to join the academia be a university lecturer. I wanted to get a stable job and get promoted. I did the Ph.D. for my father to make him happy. I believed in myself. I was determined set targets to complete my work. I was never pushed to do what I knew I had to do. I had very many fears.</i>	Job placement Promotion For the sake Confidence Determination Fears
<i>I was an aggressive writer, read abstracts, read journals, wrote many articles. But was not sure whether what he had written was right. Writing was not easy. I had very poor writing skill at first and this affected I Ph.D. Writing is like riding a bicycle; to learn how to ride it, you have to keep riding it</i>	Aggressive writing Writing was challenging Writing needs practice
<i>I was teaching in a university, made presentations, I participated in research-related activities during my masters, I was exposed to research skills which motivated me to enroll for the Ph.D. program. I only needed a master's to teach in the new university. But with the coming of NCHE, all lecturers are have a Ph.D..</i>	Participation in research activities Exposure Policy

Figure 1: Emerging Codes and Themes for Individual Characteristics



Results above indicate that eleven themes emerged: plan, sacrifice, support, family, jobs, determination, fears, aggressiveness, challenge, exposure, and policy. The Ph.D. students should plan well for resources, be ready to sacrifice and forego many things, should be supported by those around them, and. That family members are very critical in completing a Ph.D. program. It was interesting to note that Ph.D. students were encouraged to persist in the Ph.D. program to either get a job or be promoted to their current jobs. Ph.D. students should have determination, be aggressive writers, and be exposed. However, some had lots of fears and faced lots of challenges. Finally, there was a category of Ph.D. students who only thought about enrolling and persisting to complete their Ph.D. program after putting in place a policy concerning academic staff in universities in Uganda, particularly state universities. Having

presented and analysed the two strands of data separately, interpretation was made jointly using a joint display Table. This is illustrated in Table 6.

The Joint Display Table interpreted both strands of quantitative and qualitative data side-by-side. The table indicated that it is only the quality of the relationship with the family whose quantitative statistics were complemented by qualitative voices. The rest of the results from both qualitative and quantitative strands indicated that some participants were in agreement with the quantitative statistics' interpretation, yet others contradicted. This is a true reflection of the real world, where even a single person can have two thoughts on the same concept!

Table 6: A joint display table for individual characteristics as predictors of program completion

Theme	Quantitative Findings	Qualitative Findings	Mixed
Plan	Mean = 3.49	<i>Ph.D. completion takes more than SE. It is about planning, sponsorship, and, specifically individual commitment. "It takes individual discipline to complete a Ph.D. program because I have seen project students failing even when finances were available to cater for family and the Ph.D. activities."</i> Daniel.	Qualitative voices contradicted with quantitative statistics.
Support	Mean = 3.54	<i>Supportive family leads to Ph.D. program completion. "If family had not supported me, I wouldn't have completed this program,"</i> Angela.	Qualitative voices supplemented quantitative statistics
Sacrifice	Mean = 2.62	<i>Prolonged study period. "I got time to work on most of my work, which had to be updated regularly,"</i> Bridget. <i>Interference: "Well, at several points, I regretted why I re-registered because, remember, earlier alone, I had given up because the time required for my family was very much limited because of Ph.D. related activities and especially when it came to sickness,"</i> Charles.	Qualitative voices confirmed the quantitative statistics.
Jobs	Mean = 3.99	<i>Status, "Many people are pushed to do a Ph.D. because of the academic status,"</i> Daniel and <i>"I did not expect any promotion since I was already at the ceiling of my job because I only need a maximum of a Masters which I already had. "</i> Brian. <i>"I did the Ph.D. for my father, who was a professor in the university. My father forced me to do a Ph.D. and I wanted to make my dad happy."</i> Charity.	Qualitative results confirmed the quantitative statistics.

Theme	Quantitative Findings	Qualitative Findings	Mixed
		<p>Promotion "I was encouraged to complete the Ph.D. program so that he could get a stable job, get promoted," Andrew</p> <p>Job requirement: "I did my Ph.D. while lecturing at the University; I was pushed because survival in the university where I was working required one to have a Ph.D." Charles.</p>	<p>Qualitative results contradicted with the statistics.</p> <p>Qualitative results confirmed the statistics</p>
Determination and Fears	Mean = 4.38	<p>Determination "I was never pushed to do what I knew I was supposed to do," Angela, and "I just discovered along the way that Ph.D. required one to be more dedicated to do it and forego all other activities," Charles.</p> <p>Self-belief "I very much believed in myself. Masters gave me confidence because I realised I could go ahead to do a Ph.D." Angela.</p> <p>Fears "I had many fears, but I was simply encouraged by my professor in a university abroad" Andrew</p>	<p>Qualitative findings confirmed the quantitative statistics.</p> <p>Qualitative findings contradicted quantitative statistics.</p>
Grit	Mean = 4.36	<p>Resilience "Much as the project was pushing, I was ready to complete," Daniel.</p> <p>Persistence "I learned from the Ph.D. path that there was no room for giving up" Charles</p>	<p>Qualitative results complemented quantitative statistics.</p>
Aggressiveness and challenge	Mean = 2.56	<p>Challenging "I was not a very good writer. My supervisor commented on every word I wrote," Charity and "I had very poor writing skills at first, and this affected my Ph.D." Charles.</p> <p>Aggressiveness "Much as Ph.D. writing is a very lonely exercise, I started to write during my Master's degree and even published. I was in a good university," Daniel.</p>	<p>Qualitative results complemented quantitative statistics.</p> <p>Qualitative results confirmed quantitative statistics.</p>
Exposure and policy	Mean = 3.66	<p>Lecturing "Being a lecturer exposed me to research-related activities." Bridget.</p> <p>Encouragement "I did some research which encouraged me to do a Ph.D." Bridget</p> <p>Training "I went for training during my Masters" Bridget</p> <p>Exposure "I participated in research-related activities during my Masters" Bridget</p> <p>"The coming up of NCHE that instituted a policy of Ph.D. as a requirement to teach in University made me enroll for a Ph.D." [Charles].</p>	<p>Qualitative results complemented quantitative statistics.</p>

DISCUSSION

The findings revealed that Hypothesis (H1) that individual characteristics had a positive and significant influence on program completion was derived. This was in agreement with a number of earlier studies. For instance, Osamika et al. (2021) discovered that individual characteristics significantly influence psychological well-being. Students have inherent motivation to absorb and explore autonomously and without hindrances. Similarly, as personality traits play key roles in ensuring persistent strong-will in students, contents of present psychological well-being in an individual, increase students quest to succeed and achieve in their life. Hence, the key elements of students' academic success include their need for psychological competence, relatedness, and autonomy in carrying out their day-to-day academic activities, which serves as the important route connecting psychological well-being and academic success.

Smidt (2015) revealed that individual characteristics such as conscientiousness are associated with study satisfaction for college students. Similarly, other individual characteristics which significantly influence students' success include: self-motivation and self-efficacy, self-effort, self-discipline, and independent learning (Singh, 2018). Singh concluded that students with a disciplined approach of self-motivation, self-initiation, and hard work are able to complete their studies on time. Finally, Meyer (2023) whose study revealed that there is a positive association between openness and academic achievement. Apart from the above, the study was further consistent with the findings of Meyer (2023). These revealed that there is a positive association between openness and academic achievement. Nonetheless, the findings were inconsistent with Tynan et al. (2020) study, which discovered that there were weak linear relations between grit and academic performance. They are also inconsistent with the findings of Osamika (2021), who partly revealed that students who are high on neuroticism are easily stressed, are very reactive, and may not

want to persist in academic challenges or difficulties.

Further Hypothesis one (H1) was fragmented into 8 sub-hypotheses (sub-H1-H8) relating program completion to SES, quality of relationship with family, study-family balance, expectations, self-efficacy, grit, writing, and prior experiences. The discussion of the same follows here under.

Regarding SES and program completion of Ph.D. Students, the results of the sub-hypothesis that *Social-economic-status predicts program completion* showed that SES significantly predicts program completion. Therefore, the sub-hypothesis (H1) was accepted. This finding agreed with many earlier studies. For instance, Harahap (2022), whose study revealed that there was a positive significant influence between socio economics of parents and student achievement. Chen (2018) found that the lower the student's SES, the worse one's academic achievement. Ishitani (2006) and Petty's (2014) findings indicated that college persisters most likely come from families whose parents were more educated, urban, and affluent because such parents motivate their children to follow their footsteps; hence, such students were likely to persist to graduation. Similarly, the findings were in agreement with the study done by Patten (2019), who found that SES has a positive relationship with academic achievement, particularly in Mathematics. This finding was also in agreement with Müller & Klein (2023), whose study revealed that, among students who enroll in higher education, those with less-educated parents and working-class families are more likely to drop out before obtaining a degree. However, the findings contradict many earlier studies. For instance, Quansah (2022) whose findings concluded that when the right atmosphere or conditions are created, students can perform well irrespective of their socioeconomic statuses or backgrounds. Sirini (2005), whose meta-analysis revealed that the magnitude of the relationship between SES and academic achievement was not strong. Similarly, this study was inconsistent with the findings of Macaulay (2023), whose study

revealed that, while students from low socioeconomic status (LSES) backgrounds experience barriers to accessing higher education when undertaking their higher education through to completion, these students' academic outcomes are comparable to students from higher SES backgrounds. The discussion which follows SES is that of the quality of relationship with the family.

Regarding the quality of relationship with family and program completion of Ph.D. Students, the results of the sub-hypothesis that the *quality of relationship with family predicts program completion* showed that the quality of relationship with family did not significantly predict program completion. Therefore, the sub-hypothesis (H2) was rejected. The study findings varied from findings of earlier scholars. For instance, Bhatia (2012) found out that it was easier to achieve professional success for those who are happy with their private life. Not only that, studies by Nachinaab & Alexander (2019) and Andama (2020) revealed that support and encouragement from spouses lead to the motivation graduate students need to integrate and persist until program completion, which also contracted with the current study findings.

Concerning study-family balance and program completion of Ph.D. Students, the results of the hypothesis that *Study-Family Balance predicts program completion* showed that *Study-Family Balance* did not significantly predict program completion. Therefore, the sub-hypothesis (H3) was rejected. The findings contradicted the findings by Loscalzo et al. (2019) and Greenhaus & Powell (2006), who discovered that study and family are the two most important life domains that are interdependent and end up affecting academic achievement. And that engagement in one is harmful to the other, and that it is sometimes associated with family dissatisfaction, difficulties at work, work dissatisfaction, higher distress, and inter-role conflict. They further reported that work and family role pressures are mutually incompatible.

As regards expectations and program completion of Ph.D. Students, the results of the sub-hypothesis that expectations *predict program completion* showed that expectations did not significantly predict program completion. Therefore, sub-hypothesis (H4) to the conclusion that expectations predict program completion was rejected. The findings, therefore, contradicted many earlier studies. For example, Ampaw & Jaeger (2011) discovered that labor market conditions of high expected earnings, which Ph.D. students expect to find out there, greatly affect their retention and significantly motivate them to complete their Ph.D. programs. Holbrook et al. (2014) also discovered that unmet expectations can lead to dissatisfaction and dropout. Spaulding & Rockinson-Szpkiv (2012) revealed that they were motivated to complete their doctorates because they expected that after earning their doctorates, they would increase their marketability, be credible, have increased professional compensation, open up many career opportunities like being an administrator, career progression to full professorship or promotion.

Furthermore, a study done by Carpenter et al. (2004) indicated that students' self-expectations influenced academic performance and were optimistic and confident about graduating from high school. Such expectations may push candidates to persist until they achieve the intended goals, therefore contradicting the current study findings.

However, Hudson et al. (2020) agreed with the findings of the current study. They found out that learning was important in their community. One just had to go out, graduate, and try to live a very productive life. Parents did not bother so much. The study findings also concurred with Rubie-Davies et al. (2010), who found out that students' self-expectations and beliefs were most likely based on their prior achievements, experiences, and parents' and teachers' aspirations, not that they were pushed to complete their programs because they expected much from the doctorate.

As regards self-efficacy and program completion of Ph.D. Students, the results of the sub-

hypothesis that self-efficacy *predicts program completion* showed that self-efficacy did not significantly predict program completion. Therefore, sub-hypothesis (H5) to the conclusion that self-efficacy predicts program completion was rejected. This did not concur with the findings by Hadi & Muhammad (2019), who revealed that the higher the students' potential for self-efficacy, independent learning, and social support, the greater their possibility of persistence. Students with low self-efficacy tend to consider responsibilities as more complicated than they actually are. Kundu (2020) found out that students with high self-efficacy are more resilient in facing obstacles, demonstrate stronger academic performance and achievement, have increased confidence, and are more engaged than those with low self-efficacy.

Concerning grit and program completion of Ph.D. Students, the results of the sub-hypothesis that *grit predicts program completion* showed that grit did not significantly predict program completion. Therefore, sub-hypothesis (H6) to the conclusion that grit predicts program completion was rejected. The study findings agreed with many earlier scholars. For example, Christopoulou et al. (2018) found out that grit showed a weak or moderate correlation with education. Galaleldin & Anis (2019) also revealed that students' grit levels were not found to be statistically significant predictors of the students' assessment scores. Those who disagreed with the current study findings were Littman-Ovadia & Lavy (2016), whose study revealed that grit related to higher grades significantly predicted class participation and a wide range of both academic and non-academic achievements. Gritty Ph.D. students employed stamina, stayed on track, had a greater sense of belonging, demonstrated an increased levels of self-control, mental well-being, life satisfaction, the feeling of worth, resilience, and growth mind set, and attained their goals. Littman-Ovadia & Lavy (2016) further discovered that a Ph.D. student with high-perseverance does not only invest more energy in a particular task at a given moment but does it

with unvarying stamina over time to pursue their long-term goals.

As regards writing and program completion of Ph.D. Students, the results of the sub-hypothesis that *writing predicts program completion* showed that writing did not significantly predict program completion. Similarly, the study rejected sub-hypothesis Seven (H7) which suggested that writing predicts program completion. The findings were inconsistent with the findings from a number of scholars. For instance, (Okeke-Ihejirika et al. (2019) established that writing is an important skill that significantly impacts both Ph.D. students' successful completion of their training and their chances of embarking on an academic career path. Lonka et al. (2014) indicated that writing helps Ph.D. students frame their arguments and use their own language specialty in accordance with strict disciplinary norms and regulative conventions and that Postgraduate research requires a good command of English as a medium of formal scientific communication in the education setting.

Apart from that, Lonka et al. (2014) further indicated that Ph.D. students might feel threatened by a variety of critics and hence become liable to procrastination, perfectionism, and writer's block. Ssenyonga & Nakiganda (2020) revealed that Ph.D. students without adequate English language skills are more likely to have trouble during the process of articulating their research ideas, yet writing skilfulness determines the accomplishment of postgraduate research. They further revealed that because Ph.D. writing follows a particular scientific writing style, this dictates the expected standard and structure and provides scholars with guidelines to be followed in their scholarly work when communicating with the scientific community. Such guidelines include the required structure, citation style, and research ethics, among others. Apart from the above, Ayiro & Sang (2011) also found out that Ph.D. students face a problem with writing academic English, which delays them in the program. Phillip & Pugh (2007) found out that students experience a great deal of discomfort when attempting to present

results in written form because writing makes people think about their work in a different way.

Concerning prior experiences and program completion of Ph.D. Students, the results of the sub-hypothesis that *prior experiences predict program completion* showed that *prior experiences* significantly predict program completion. The study, therefore, accepted sub-hypothesis Eight (H8) to the conclusion that prior experiences predict program completion. This finding was consistent with a number of scholars. For instance, Hathaway et al. (2002) indicated that the number of hours an undergraduate student talked with the faculty outside class, worked on a professor's research project, and the number of their class papers critiqued by faculty had a significant influence on research opportunity program (UROP), show higher retention rates and academic achievement than those who do not; and were significantly more likely to pursue Ph.D. programs and research related activities. Austin (2002) revealed that many participants had reported that their research experience gave them confidence in their ability to design studies, frame research questions, and write for graduate degree aspirations. Hathaway et al. (2002) further discovered that students who get involved in the undergraduate publications, show higher retention rates and academic achievement than those who do not; and are significantly more likely to pursue Ph.D. programs and research-related activities. Anderson & Anderson, (2012) reported that once students got involved in different research projects with different faculty members, they benefited a lot in research because this prepared them for their dissertations. Ampaw & Jaeger (2011) found out that research assistantships had the highest likelihood of degree completion. The study findings above indicated that social-economic-status and prior experiences, especially those related to academic work, were significant predictors of program completion, with prior experiences being the most significant predictor.

CONCLUSION

The discussion above on individual characteristics and Program completion of Ph.D. students led to

the conclusion that individual characteristics are vital elements in completing the Ph.D. program. This is because those with high Social-economic-status are capable of paying the tuition, paying for the internet, and therefore accessing all the required literature. Similarly, Ph.D. students who once worked as tutors, attended research-related workshops, and participated in a research project before enrolling in the Ph.D. program were able to complete their Ph.D. program. Therefore, SES and prior experiences were likely predictors of program completion. Nonetheless, quality of relationship with family, study-family balance, expectations, self-efficacy, grit, and writing were not statistically significant predictors of program completion of Ph.D. students at Makerere University. To date, Tinto's Model remains relevant to Ph.D. studies on persistence even in the context of Makerere University since its constructs, SES, and Prior experiences derived from the original Model were statistically relevant.

Recommendations

Management of Universities should support Ph.D. students based on their differences in individual characteristics, such as social-economic-status to enable them to complete their Ph.D. programs on time. For instance, those who struggle to pay tuition should be supported with loans or should be guided on how to access scholarships given to postgraduate students. For those who have no access to utilities such as electricity and internet, the university should support them with wireless internet and offer them subsidised accommodation to have them complete their programs on time. Similarly, the management of universities should pick interest in information concerning Ph.D. students' prior experiences and support them accordingly to see to it that they complete their program on time. For instance, some students once worked as assistant lecturers, and others had an opportunity of attending workshops, others participated in a research project before joining the Ph.D. program, and there are those who did not attend any of these. The support to be given to the Ph.D. students

should, therefore, be based on one's prior engagements. However, university management should not prioritise the students'-family relationship, study-family balance, expectations, self-efficacy, grit, and writing abilities.

Areas for Further Research

The study cannot explain evidently why some of the items in Tinto's Model were rejected. This, therefore, calls for further research to be done to establish why. Many individual characteristics constructs which were expected to be significant turned out not to be. For instance, quality of relationship with family, study-family balance, expectations, self-efficacy, grit, and writing. Studies can be done to explain why. The study was limited to only individual characteristics as predictors of Ph.D. program completion. However, many factors that can possibly predict program completion were left out, like the COVID-19 lockdown and personal health challenges (Twebaza, 2023). Studies should, therefore, be done on these factors.

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