Research article

The Academic Persistence of First-Year First-Generation African Students (FYFGAS): A Framework for Higher Education in South Africa

Soraya Motsabi,* Boitumelo Diale** & André van Zyl***

Abstract

Since the dawn of democracy, South African universities have seen increased access to higher education from African students, the majority being first-generation students (FGS). This increase to access came with challenges of retention and throughput amongst first-year first-generation African students (FYFGAS). Despite these challenges, there have also been FYFGAS who have successfully passed their first year and completed their qualifications. This article used a mixed method approach with a sample of 311 FYFGAS who were registered in a standard first-year course in three faculties at a university in Gauteng. Quantitative data were collected through a questionnaire and qualitative data were collected from individual semi-structured interviews. Analyses included the use of Structural Equation Modelling which provided interesting insights into the inter-relations between various factors. Findings from the data analyses were used to create a framework of persistence for FYFGAS in higher education. The framework focuses on the resilience factors of first-year students and the role of the institution in ensuring that these students are successful. It also provides a guide for institutional interventions aimed at improving the persistence of FYFGAS.

Keywords

first year; first-generation African students; first-generation students; higher education; persistence; resilience; social support

Introduction

Many studies have been conducted in an attempt to understand student retention and persistence in higher education, specifically first-year persistence (Braxton & Hirschy, 2005; Tint, 1975, 1993, 1997). Persistence in the first year of study at university is vital because it serves as an introductory and transition year to higher education, and increases the likelihood of qualification attainment. Yet, it has the highest drop-out rates (Tinto, 2006-2007). In South Africa, the drop-out rate of first-year students is estimated at 33% (CHE, 2013; DHET, 2019).

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As students at university face academic pressure and challenges that could derail them from continuing with their studies, it is necessary to understand how and what makes them persistent in the face of adversity. Martin and Marsh (2009) refer to this resilience as academic persistence. This study investigated the contributors to and co-determinants of the academic persistence of first-year first-generation African students (FYFGAS) in higher education (HE).

Theoretical Framework

In this article, the researchers drew from two persistence theories: The *Longitudinal theory of interaction* by Vincent Tinto (1975, 1993) and the *Comprehensive model of student learning* by Terenzini and Reason (2005). At the same time, the researchers were interested in the resilience of FYFGAS and therefore, also used *positive psychology* as a third lens to review student persistence.

Tinto (1975, 1993) posits that students' persistence and departure are influenced by a longitudinal interaction of their attributes and the university environment both academically and socially. He further postulates that the students' pre-entry attributes which include demographics, previous school experiences, and personal qualities, influence their decision to pursue or terminate their studies. Tinto (1975, 1993) believes that students who persist are well integrated academically and socially into the institution which influences further commitments and success. Integration is pivotal in this theory as it leads to increased commitment to degree completion and to the institution itself.

Terenzini and Reason (2005) base their theory on that of Tinto, but extend it to include the organisational aspect of the institution. Their comprehensive model takes into account the pre-entry attributes, the university as an organisation with a specific culture and the students' interaction with their peers that influence adaptation and transition. This theory emphasises the students' experiences within the institution and how these experiences can lead to persistence.

Lastly, academic resilience (Martin & Marsh, 2009) was used as a third perspective to investigate the contributors to and co-determinants of the academic persistence of FYFGAS in HE. Academic resilience manifests in the students' capacity to overcome chronic adversities that threaten academic activity and success (Martin & Marsh, 2009). This definition includes the ability to achieve academic excellence despite often being burdened by numerous risk factors simultaneously. Therefore, resilience is the ability to do well and maintain a positive outlook despite the challenges and adversities of life.

Rationale

First-generation students (FGS) are a growing subgroup within the higher education student population. These students, whose parents have no higher educational qualification or have not attended a university, find themselves at a distinct disadvantage. International literature (Engle, 2010; Rood, 2009) indicates that FGS are more likely to be underprepared for higher education and are more likely to leave university without graduating.

With improved access to higher education institutions (HEIs) in South Africa, there has been a steady growth of African students, the majority of whom are FGS (Scott et al., 2007; Van Zyl, 2010). While the reasons for the high failure rate amongst African students have been researched (Fisher & Scott, 2010; Lewin & Mawoyo, 2014), few or no studies have been conducted to understand the contributors and determinants of success and persistence amongst FYFGAS. This lack of knowledge hinders HEIs in developing relevant support strategies that would enable their success.

Statement and Research Problem

Despite a significant increase in the number of FYFGAS in South African higher education institutions, there is still no in-depth understanding of the profile of these students. Secondly, the high attrition and drop-out rates amongst this group means attempts at promoting persistence are failing. Additionally, the majority of studies have viewed these students from a deficit perspective and therefore, while there are some students who do persist and succeed, there is no clear understanding of the strengths that enable them to do so.

In this study, an attempt has been made to research the contributors and determinants of persistence amongst FYFGAS in the South African context.

Research Methods

Design and setting

Participants in this mixed method study were first-year extended degree students in the Science, Humanities and Economics Faculties registered in 2014 at a university in the Gauteng Province, South Africa. The quantitative data were collected through a non-probability convenience sampling method. The sample consisted of 311 students. The target population was easily accessible and available at the time of this study. All extended degree students, who were in class attending a common extended degree module in the sixth week of the academic year, were selected to participate in the study. For the qualitative part of the investigation, purposive and criterion-referenced sampling was used to select participants. Participants were FYFGAS who had completed the initial quantitative questionnaires, had persisted through the first semester, and had passed all their first semester modules in 2014. Permission to conduct the study was granted through the Research Ethics Committee of the Faculty of Education at which the researcher was registered for the duration of the study.

Measures

Quantitative section of the study

For this section of the study, a single questionnaire was composed which firstly consisted of the biographic information. It secondly contained three relevant subscales of the Academic Behaviour and Attitudes Questionnaire (ABAQ), namely achievement motivation, locus of control and self-efficacy. The ABAQ measures participants' beliefs, attitudes and values

associated with six non-cognitive aspects related to academic behaviour and performance. It has been widely used and validated, including in the South African context (Bloye, 2007; Jacobs, 2010). The third section of the questionnaire consisted of social support questions taken from the California Healthy Kids Survey (CHKS), Module B. The California Healthy Kids Survey (CHKS) is a comprehensive youth health risk and resilience data collection instrument. It assesses nine external resilience assets and six internal resilience assets (Hanson & Kim, 2007; WestEd, 2003). Students are also asked to indicate their perceptions of three protective factors, namely, caring relationships, high expectations and opportunities for meaningful participation in each of the four key environments of school, home, community and peers (Hanson & Kim, 2007, p. 7). The CHKS has been successfully used amongst South African youth (Johnson & Lazarus, 2008), and therefore was regarded as suitable for students in South African HE.

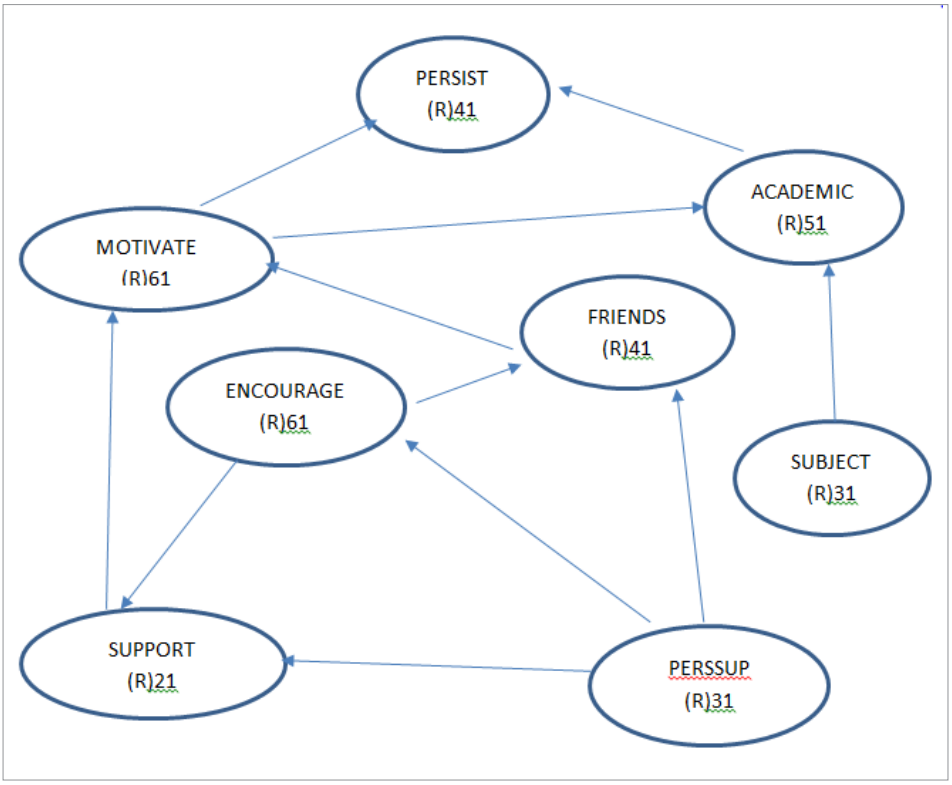

Figure 1: A structural equation model with the hypothesised relationships between the variables selected from the ABAQ and CHKS and persistence

Analysis

For the analyses of the data, it was decided that first-generation methods, such as multiple regression, which are suitable for assessing constructs and relationships between constructs (Alavifar et al., 2012), were not suitable. Structural equation modelling (SEM) was then selected to investigate persistence in HE, which is known to be a complex and multi-layered problem. SEM enabled the researcher to perform test models with multiple dependent variables using several regression equations simultaneously. This study contained complex and latent variables and thus was suitable for SEM. The partial least squares path modelling (PLS-SEM) was used. PLS-SEM is a particularly useful method when researchers aim to analyse success factors and the sources of competitive advantage (Sarstedt et al., 2017). The goal of PLS-SEM was the explanation of variances instead of co-variances. This technique allowed estimation of complex cause–effect relationship models with latent variables (Sarstedt et al., 2017).

All the data generated from the questionnaire were firstly included in a Principal Component Analysis (PCA – utilising Varimax Rotation with Kaiser Normalisation) to 'reduce' the number of variables and to identify any underlying structures in the data. Twelve factors/components (only factor loadings ≥ 0.5 were used) were extracted (the Kaiser-Meyer-Olkin measure of sampling adequacy was equal to 0.757, and Bartlett's test of sphericity was significant at the 1 percent significance level – indicating that factor analysis should yield reasonably distinct and reliable factors (Field, 2013). The total variance explained by the extracted components was equal to 66.395%. The following extracted components were obtained through the PCA analysis:

- Factor 1: Adult encouragement – external
- Factor 2: Person support – internal
- Factor 3: Friends' support
- Factor 4: Persistence
- Factor 5: Academic ability
- Factor 6: External activities
- Factor 7: Internal motivation
- Factor 8: Subject motivation
- Factor 9: External influences
- Factor 10: Self-blame
- Factor 11: Reason to study
- Factor 12: Expectations

The above 12 factors explained 66.40% of the total variance. After several iterations of the basic model were run, the final measurement model resulted in a relatively good model fit with APC = 0.253 ($p < 0.001$), ARS = 0.139 ($p < 0.008$), AVIF = 1.040 (Ideally ≤ 3.3), GoF = 0.290 (Medium ≥0.25), AARS = 0.133 ($p<0.011$), AFVIF = 1.217 (Ideally ≤ 3.3), SPR = 1.000 (Ideally = 1), and RSCR = 1.000 (Ideally = 1).

A good-fitting model is one that is reasonably consistent with the data and does not necessarily require re-specification (Kenny, 2011). Use was made of R^2 and path coefficients to test the fit of the model. The model was evaluated for goodness-of-fit

to determine how well the 'Perceived Intention to Persist' model explained specific situations. The latent variables included in this model (mostly based on the results of the PCA), the above 12 factors, were combined into eight groups for further analyses, namely:

- Group 1: (Encouragement) consisting of the variables from Factor 1 and Factor 9.
- Group 2: (Person support) consisting of the variables from Factor 2.
- Group 3: (Friends' support) consisting of the variables from Factor 3.
- Group 4: (Persistence) consisting of the variables from Factor 4.
- Group 5: (Academic ability) consisting of the variables from Factor 5 plus Question 2 (which was not included in any of the factors).
- Group 6: (Motivation) consisting of the variables from Factor 6, Factor 7 and Factor 8.
- Group 7: (Subject) consisting of the variables from Factor 11 and Question 19 from Factor 8.
- Group 8: (Support) consisting of selected variables from Factor 1 and Factor 2.

The Qualitative Study

In the qualitative phase of the study, focus groups and individual interviews were conducted to collect data. The study investigated the students' actual experiences of HE and the perceptions of the determinants and contributors to their persistence. The qualitative findings are reported more fully in Motsabi, Diale and Van Zyl, 2020.

Results and Discussion of the Framework

The findings of this study were combined and resulted in the creation of a framework for the persistence of FYFGAS as indicated in Figure 2.

The model was derived from a combination of theory and the qualitative and quantitative research results of the study. The various aspects of the model are explored in more depth below.

Pre-entry attributes

The first part of the framework is known as pre-entry attributes. This refers to the background experiences and characteristics of the FGS. Many FYFGAS enter with a combination of pre-entry attributes that places them at a distinct disadvantage. These factors may include coming from financially deprived environments where parents are unemployed, single-parent or even child-headed families. They all come from homes where the previous generation had no higher education qualification meaning they have less academic support at home than non-first-generation students.

Additionally, most FYFGAS attended their primary and secondary education in areas with poorly resourced schools, where often, teachers were inadequately qualified and used an African language to teach instead of English. Proficiency in the language of instruction therefore becomes a challenge for these students (Du Plessis & Gerber, 2012).

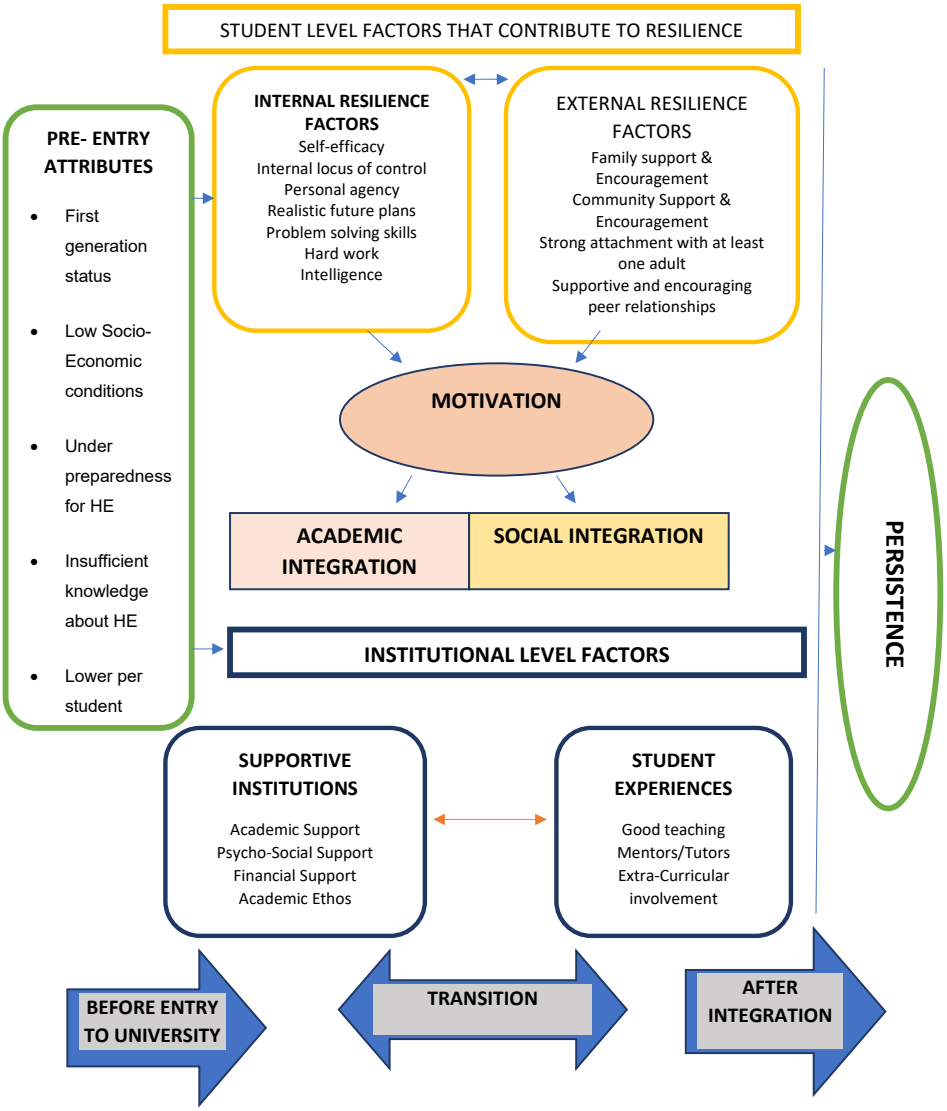

Figure 2: Proposed framework for the persistence of FYFGAS in higher education

These pre-entry risk factors create a distance between the student and the institution, which hinders a smooth transition. Those students who were able to successfully adapt and adjust seem to have psychological resilience attributes and dispositions that serve as a buffer against risk. These buffering factors are divided into two: firstly, internal resilience factors and secondly, external encouraging factors.

Student level

Internal resilience factors

FYFGAS who exhibit personal-psychological attributes that include self-efficacy, internal locus of control, personal agency and hard work, are better placed for success and persistence. Students who believe in their potential to succeed tend to be more positive and resilient and can motivate themselves to behave in more positive ways (Bandura, 1994). Self-efficacy is closely related to an internal locus of control, which is a belief that one is responsible for one's actions and their outcomes (Neill, 2006). Therefore, they will spend psychological energy on their studies while focusing on their academic goals which Astin (1999) refers to as 'involvement'. FYFGAS who have an intention to persist, get fully involved in the first term of the first year.

FYFGAS who have personal agency and take the necessary initiatives to accomplish their goals perform better and thrive. They will expend extra energy to help themselves such as attending extra classes or consulting a tutor or mentor.

The level of motivation was found to be directly linked to persistence in both the quantitative and qualitative results of this study. When university became challenging, they would talk to either parents or peers who would encourage them to persevere. These students persevered despite adversity because they really wanted to complete their qualification.

External resilience resources

External resilience resources such as community, family and friends assisted FYFGAS as they navigated higher education, as they tended to cushion the students from the impact of the challenges they faced. FYFGAS who had supportive families tended to experience less stress and exhibit high resilience (Wilks, 2008). Both quantitative and qualitative findings indicated that these students take their parents' and family's support seriously.

Many parents instilled the importance of attending university in their children. Some students indicated that when things got tough, it was their parents who encouraged them and reminded them of their resilience. This relationship had a strong influence on how they faced their challenges (Westbrook & Scott, 2012).

Involvement in their communities enabled the students to integrate their university culture into their home environment. In the African tradition, it is believed that one's education is not for self, but the community. Some students were supported by their communities in the form of teachers who set certain success expectations for them. Luedke (2014, p. 158) found that these 'cheerleaders' play significant roles in instilling high expectations of the students and provided guidance to them throughout their university education.

Peer support and encouragement also played a key role for FYFGAS, especially within the university. In this study, it was discovered that peers would make great efforts to support each other, providing accommodation, encouragement, food and other forms of assistance.

Senior students sometimes provided academic support and skills necessary to navigate higher education. Students who made friends who could face challenges with them, found it easier to adapt and persist.

All these forms of support led to the students feeling motivated, making it easier to engage in learning for the pleasure and rewards that could be achieved. Being motivated also makes it easier to integrate and socialise at university, internalising the values of the institution (Próspero et al., 2012) resulting in institutional and goal commitment (Tinto, 1993).

Institutional level factors that contribute to FYFGAS' persistence

In terms of student persistence, successful institutions were those that helped their students in their transition and retained them towards degree completion. Tinto (2012) reconsidered the role of institutions in advancing student persistence in that HEIs should cater and commit to educating all their students.

Institutional level support

Academic support

Students who felt confident of their academic skills and trusted that they could cope with the expected workload, had a higher intention to persist. Therefore, FYFGAS, who had lecturers who gave appropriate assessments and suitable feedback on their performance on time, were more persistent as was highlighted by Tinto (2012).

Furthermore, success and persistence were improved by the availability of resources such as libraries, laboratories and computer centres. Some students had difficulties acquiring computers or tablets that are necessary tools for learning. The institution was able to provide all first-year students who had financial aid with these devices, and that contributed to their success and persistence.

Psycho-social support

Higher education institutions (HEIs) that provided emotional and academic support to the first-year students indicate that they understand the needs of their students. Being a first-year student can involve times of loneliness and other forms of psychological distress and students need orientation to the new milieu of HE. This is especially true for FYFGAS because they come from areas and families where university culture is not discussed and prepared for. Orientation at the beginning of the year provided these students with skills, knowledge and values that were beneficial to their studies and prepared them for the challenges ahead.

Financial support

One primary reason for persistence for FYFGAS is financial support. Financial aid has been found in numerous studies of FGS as a major contributor to student persistence (Breier, 2010; Jones et al., 2008). While most of their parents paid for their fees, almost all of the

students in this study intended to apply for financial aid as their parents' finances could not sustain them. Institutions should have financial aid offices that provide information on bursaries and financial aid which is information not readily available to FYFGAS. Presently, in South Africa, this challenge has been partly addressed through the government in 2018 offering free education for all new students where their household combined annual income is lower than R350 000 per annum (Tshwane, 2018).

Student experiences

The students' experiences of the institution both in and out of class enhances their willingness to stay. For example, experiences with other students and lecturers in the lecture hall contribute directly to their decision to persevere as this is where they meet for learning and social exchanges (Tinto, 2006-2007).

Good teaching counts in persistence

Tinto (2012) posits that students are at university to learn which takes place primarily in the classroom. FYFGAS found that lecturers who acted in caring ways towards them increased their likelihood of persistence and retention. Lecturers who prepared and taught their courses with all the students in mind, made it easier for new FYFGAS to participate in class and feel that they also matter. These lecturers realise the academic barriers that their students face such as the overwhelming workload and turnaround time for assignments. McGhie (2012) states that African students are disadvantaged because they must construct meaning in a second language, so good teaching creates a positive feeling and students become more eager to learn.

The role of tutors and mentors in enhancing student experiences

Tutoring is often an integral part of a university's teaching-learning process and an essential strategy for improving students' academic success and goals (Morillas & Garrido, 2014). Tutoring is regarded as a 'high-impact practice' as it helps to improve the performance of first-year students. Participants in this study highlighted how the tutors helped them in understanding their course content and also helped them to solve any difficulties that arose.

Another initiative involving senior students who helped the FYFGAS to persist in their first year was the use of mentors. These are students who were not obliged to develop new students' academic skills but were there to help socialise them into the institution. According to Tinto (1993), social integration is vital in ensuring that students commit to the institution. This integration that serves to create a sense of belonging happens throughout the year.

FYFGAS, who have a positive experience from these interactions with senior students, stand in good stead for persistence and success. Combined with their psychological resilience factors, FYFGAS who find HE exciting and challenging will enhance their learning opportunities.

Experiencing involvement in extracurricular activities

Student retention and success is bolstered by a strong sense of belonging in HE students. This belongingness is nurtured through mainstream activities that all students participate in (Thomas, 2012). Involvement in extracurricular activities provides university students with opportunities to meet and connect with other students, explore areas of interest, and contribute to the campus and community (Andring, 2002). FYFGAS who got the chance to create networks and feelings of belonging, were integrated into the institution's social system which enhanced their chances of persistence. Astin (1984) believes that for students to learn and grow, they need to be actively involved in their environment. Pascarella and Terenzini (1991) state that studies have proven the correlation between involvement and its positive relationship to persistence and educational attainment.

Recommendations for Higher Education Institutions

The main recommendation from this study is that HEIs should nurture all the first-year students and should understand their student communities in order to be able to provide them with the necessary support that they need. This can be done through collecting data on the profiles of their students. FYFGAS need personal and social support resilience skills. Universities should provide programmes that enhance these skills, such as training on assertiveness, locus of control, etc. and programmes on mentoring, peer counselling, tutoring and team-building during orientation. Furthermore, universities can design strategies that include parents and families in the life of the first-year student. This study also revealed the importance of student funding and academic development skills for FYFGAS.

Conclusion

This framework sought to explain what it means to be a FYFGAS in higher education and indicates the factors that contribute towards persistence and how HE could develop strategies to help them to succeed and persist through the first year. FYFGAS come from poor environments, have experienced inadequate educational preparation and have parents who do not have a university education, but through their own resilience and institutional support, they are able to thrive and succeed. In using the framework, HEIs will be able to assist these students to persist and complete their studies.

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