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Migration intentions of international distance education students studying from a South African institution: unpacking potential brain drain

Abstract

The outward migration of skilled migrants has disproportionately affected the Global South, particularly in countries in Africa, producing what is commonly referred to as ‘brain drain’. Within this literature, there has been considerable focus on the future migration intentions of international students, who symbolise skilled migration. However, much previous literature assumes international education must be obtained through physical mobility, despite the growing provision of internationalisation at a distance, whereby students remain ‘at home’ while studying online or distantly from an institution based ‘abroad’. This study has unravelled the future migration intentions of students studying through online distance education, using a questionnaire of 607 South African, Namibian, and Zimbabwean students in relation to four sets of factors: academic and social adjustment, educational and work experience, socio-economic variables, and individual demographic characteristics. Our findings indicate a complex picture of international distance students’ future migration intentions and significant differences between students based on country of origin, socioeconomic status, and demographic variables. These findings have particular relevance following the increasing shifts to online distance learning following the COVID-19 pandemic.

Introduction

There is a high outflow rate of skilled people from many parts of Africa, leading to skills shortages (Maharaj, 2014). These outflows have been called ‘brain drain’ because of their impacts on service provision (Dovlo, 2004), income inequalities (Mountford & Rapoport, 2011), and future development (Maharaj, 2014). There have been attempts to stem this outflow early in the pipeline, for example by understanding and influencing the migration intentions of higher education students who have acquired needed skills (George & Reardon, 2013).

The massification of university-attending demographic cohorts alongside shortage of institutional provisions in many countries has meant that many young people travel abroad for education (Darvas et al., 2017). In these cases, educational migration may be seen as a step on the

journey to permanent migration (McGill, 2018), either in the country of study or to enable onward mobility (Alberts & Hazen, 2005). Students' desire for international education has been seen by some to counter the needs of the origin country for 'capacity building', thus satisfying the need for qualified human resources (Crush & Pendleton, 2012).

One alternative to mobility is the rising use of international distance education, where students take courses and complete degrees online and/or through blended learning models (Qayyum & Zawacki-Richter, 2019). These students undertake 'internationalisation at a distance', a form of education offered "across borders where students, their respective staff, and institutional provisions are separated by geographical distance and supported by technology" (Author C, 2020). Although there are no systematic global data about the number of students who study via internationalisation at a distance, there is evidence of its rising trend. This is particularly through the development of open universities around the world (see, for example: Tait, 2018), borrowing from the model of The Open University in the UK, which currently enrolls over 175,000 online student. On the African continent, South Africa is an important regional hub for international distance education (Author B, 2019; Author C, 2019), particularly through the University of South Africa, which has over 380,000 online students enrolled, with around 29,000 international students based in 90 countries. With the increasing use of online learning during the COVID-19 pandemic, it is also likely that online distance education may play a more significant role in the international education sphere moving forward.

However, there is limited knowledge about international distance students' future migration intentions. On the one hand, international distance education may replace educational migration by providing access to high quality education from abroad without needing to be physically mobile. On the other hand, international distance education might enhance an individual's perceived ability to migrate by offering a portable qualification without the associated costs of being an international student migrant. This paper addresses this gap through an exploration of future migration intentions of 607 international students in one of the world's largest distance education institutions, the University of South Africa (UNISA). We also consider the personal, educational and economic factors that influence the future migration intentions of distance education students, building on previous research in face-to-face learning contexts (e.g., Dziwornu et al., 2016; Toma & Villares-Varela, 2019). In response to arguments that educational migration leads to brain drain, this study explores the degree to which distance education similarly serves as a perceived catalyst for students' future international migration intentions.

Brain drain and student migration intentions

'Brain drain', the outflow of skilled personnel from one place to another, has been seen as a pivotal ethical issue in international migration. Although certainly not limited to the Global South (see, for example: Zuk et al., 2019), much focus has been placed on discourses about the Global North extracting valuable human capital from the Global South (Author B, 2009). Although these effects may be mitigated by the long-term knowledge exchange or economic remittances (Docquier & Rapoport, 2012), the continued loss of skilled people remains a concern (Capuano & Marfouk, 2013). Moreover, migration from the Global South is diversifying, leading to increased South-South 'brain drain' from low-income countries to middle-income countries (Yuan, 2019).

Within this topic, international students have been the focus of much research (Toma & Villares-Varela, 2019), as students are viewed as incipient skilled workers and, thus, valuable to their home economies. Studies on future migration intentions of students from African countries tend to focus on students moving from Africa to other continents, particularly Europe and North America (Alberts & Hazen, 2005; Hyams-Ssekasi, 2012), although regional intra-continental student migration is increasing in volume and significance with the emergence of regional hubs such as South Africa (Lee & Sehoole, 2015), which hosts over 45,000 international students, primarily from other countries in Africa (OECD, 2021).

While there is a clear link between international study and migration (e.g., OECD, 2021), students' decisions to migrate for or after studying is complex and often personal (Paile & Fatoki, 2014). Psychological research focusing on stress and adaptation have used quantitative measures and surveys to predict students' migration intentions (Li, Olson, & Hanson Frieze, 2013). These studies point to the adjustment experiences of international students during their study abroad period, although research has identified mixed response. For example, some have argued that international students who are better adjusted are more likely to consider more permanent migration in their host country (Dziwornu et al., 2016). In contrast, others contend that student adjustment reflects the achievement of initial migration goals and can, thus, lead to return to their home country (Gu & Schweisfurth, 2015).

Other research has considered how various socioeconomic and demographic variables influence future migration intentions. Key influencing elements include social networks (Manchin & Orazbayev, 2018), transnational attachments (Geddie, 2013), gender differentiated familial pressures (King & Sondhi, 2018), and previous family (Ivlevs & King, 2012) or individual (Tyson, 2018) migration

experiences. Demographic variables such as gender (Akl et al., 2008), age (Lu et al., 2009) or marital status (Gubhaju & De Jong, 2009) have similarly been identified as influencing migration intentions. Sector-based studies have also considered specific labour-market elements through the lens of push-pull factors (Nguyen et al., 2008). For example, students studying particular fields, such as medicine (Burch et al., 2011) may have greater migration intentions.

Within this, it is also worth reflecting that intentions to migrate do not necessarily materialise into followed-through plans. However, Williams et al. (2018) outline that a strong percentage of students who have intentions to migrate do have formulated strategic plans for doing so, which may or may not be impeded by existing structural barriers. Chort (2014) also highlights the value of reflecting on intentions not as future predictions of behaviour, but as a means for understanding realised future possibilities. In this regard, there is a limited understanding of the extent to which international distance education might act as an impetus for realised potentials of physical migration.

Within the literature on students' post-study migration intentions, there is often an assumed dichotomy of their current migration status as either 'international student' (i.e. physically and internationally mobile) or 'home student' (i.e. remaining within their own country). This dichotomy is disrupted by the rising use of international distance education, which we turn our attention to next.

Migration intentions and international distance education

In recent decades, there has been a growing prevalence of internationalisation at a distance, defined as students remaining within their own country, but studying from an institution based abroad through online and/or distance provisions (Author A, 2020). This trend is projected to increase as more higher education institutions shift to online learning models following the COVID-19 pandemic, during which time online learning has been called a 'panacea in a time of crisis' (Dhawan, 2020, p. 6). However, at present, there are no systematic data collected about the number of students who study through international distance education.

Research about international students tends to focus on their physical migration – the movement from one country to another country for the purpose of study. For example, a common definition of international students is that they 'typically hold a non-resident visa status' (Migration Data Portal, 2021), thereby implying migration. Defining international students along a strict home-international dichotomy has been previously critiqued in face-to-face contexts (Jones, 2017), and we argue that these criticism become even more problematic in internationalisation at a distance

settings. Such contexts outline a significant grey area: students remain ‘at home’ while simultaneously learning from ‘abroad’ (Author A, 2020). Thus, there is limited understanding of who ‘counts’ as an international student in international distance education, although we have opted to define them according to their current country being outside that of their enrolled university.

Previous research has suggested that international distance education may serve as an impetus *not* to migrate, as students are able to gain the perceived benefits of an international education without leaving home (Author C, 2019). However, this notion remains unexplored in the literature, which has predominantly focused on more ‘traditional’ definitions of face-to-face international education. As such, major questions remain about international distance education students’ future migration intentions and the extent to which distance education might mitigate or exacerbate existing concerns about student brain drain. This study addresses this gap through the following research questions:

RQ1: What are the future migration intentions of international distance education students studying at a South African institution?

RQ2: What factors impact upon international distance education students’ future migration intentions?

In doing so, we contribute to a growing understanding about the link between international education and future migration intentions, against the backdrop of concerns about the brain drain of skilled migrants. Given South Africa’s rising role as a regional hub for international students (Lee & Sehoole, 2015) and the limited research available from the perspective of South-South migration, we have also situated our research geographically within this context.

Materials and methods

Setting and participants

This research focuses on The University of South Africa (UNISA), which is the largest distance education provider in Africa. With around 380,000 students, UNISA’s mandate is to provide distance education whereby there is no requirement for students to be on campus. Examinations are undertaken in exam centres across South Africa and in other 85 countries, reducing the need to travel. See Author A (2020) for a detailed description of this instructional context.

This paper draws on the broader [name blinded for review] project, which explored the migration intentions and learning trajectories of international distance students studying with UNISA.

International distance students were defined as those students who did not live in South Africa, but were registered at UNISA (Author C, 2020). This included both South African students living outside of their home country and non-South African citizens studying from their own country.

For our analysis, we have purposefully focused on nationalities where we had at least 100 respondents, leading to three cohorts: Namibian students living in Namibia (n = 139), Zimbabwean students living in Zimbabwe (n = 311), and South African students living outside of South Africa (n=157). This decision was primarily made to preserve the validity and reliability of the statistical measures used by providing a robust sample size, as numbers below 100 may compromise the statistical strength of place as a variable in our regression analyses. However, this approach also provided conceptual advantages by allowing us to observe the impact of geographical context and differences in cohort demographics (described in our finding section) on students' future migration intentions. In doing so, our intention is not to develop complex understandings about these three individual contexts, but to reflect more generally on the role of place in framing and contextualising future migration intentions.

Questionnaire instrument

7,907 international students at UNISA were invited to participate in an online questionnaire (described in detail below), to which 939 students participated. This represents a reasonable response rate of 11.87% (Nulty, 2008) of UNISA's international distance population. As previously noted, we removed from the dataset cohorts that were below 100 samples, which means 607 responses were included in our analysis.

Ethical approval for this study was obtained prior to data collection (HREC/XXXX-blinded). The questionnaire was distributed online, as is the main means of communication at UNISA, and contained approximately 45 questions about students' future migration intentions, study experience, and demographics, as outlined next.

Dependent variables: (Future) migration intentions

Building on previous research (Alberts & Hazen, 2005), we asked 12 questions about participants' future migration intentions after completing their programme, which are our core dependent variables. To measure participants' study migration intentions, we first asked four yes/no questions relating to their intention to continue to study (e.g., "After I finish my UNISA programme, I intend to study further in my home country"). We also asked the same sequence of questions in relation to future work intentions.

Block 1: Educational adjustment variables

To unpack students' lived adjustment experiences, we included a validated instrument called Student Adaptation to College Questionnaire (SACQ). SACQ was developed by Baker and Siryk (1989) from Tinto's (1975) original conceptualisation of measures of success in higher education. It has been widely used globally (Credé & Niehorster, 2012), including in South Africa (see, for example, Sommer & Dumont, 2011). Respondents indicated their adjustment on a 1 to 9 Likert response scale across four scales. The academic adjustment scale outlines students' ability to cope with educational demands and satisfaction with the academic environment. The social adjustment scale describes how well students deal with interpersonal demands, such as making friends or working with peers. The emotional adjustment scale indicates the level of psychological distress experienced while adapting to academic studying. Finally, the attachment scale reflects the degree of commitment to the university and its institutional goals.

Block 2: Education and work variables

At this institution, degree progression is organised according to five sequential levels rather than academic years (as many distance learners study part time). The participants in our study were studying for undergraduate-level qualifications (bachelor's degrees). Most participants studied business (29%), followed by law (27%), social science (21%), science (9%), nursing and health (4%), computing (4%), arts (3%), or other (1%). Participants also indicated the level at which they were studying: 34% were studying modules at a 1st level; 21% 2nd level; 32% 3rd level; and the remainder were taking 4th and 5th level modules. Finally, the vast majority of students studied part-time towards their degree (83%), and only 12% were studying full-time. Most participants were funding this through full-time (69%) or part-time (10%) work. Some students also had the full-time responsibility of looking after family (12%). Of our participants, 46% had acquired a university qualification prior to starting online learning at UNISA. Altogether, in review of the available institutional data about UNISA students, we believe this is a representative sample of students at this institution.

Block 3: Socio-economic variables

Given the sensitivities and potential stigmas of asking participants about their income and wealth (Elam & Fenton, 2003), we opted to collect a range of proxies for participants' socioeconomic status, guided by development and education literatures. As access to technology was considered important for distance education in this context (Author C, 2019), we included 14 questions about participants' access to various technologies and resources. Moreover, the ability to access quiet learning spaces, at UNISA, work, home and/or public spaces was investigated as this can have significant influence on

successful study (Author D, 2018). Furthermore, in line with Lareau (1987) we asked whether the parent(s) of participants went to university, of which 35% of participants indicated that at least one parent did. Finally, we asked participants how many people they were financially responsible for and how many they shared their houses with. On average, participants were responsible for 2.90 members in their household (SD = 2.09) and shared a home with 3.10 people (SD = 1.80).

Block 4: Demographics

In terms of demographics, we asked for participants' ages (M = 35.61, SD = 8.67) and gender (58% were women). Regarding age, we note that the majority of our participants were working professionals in their 30s or above, which is a common demographic for distance learners. With regards to race, most students were Black (n = 64%), followed by white (21%), Coloured (6%), and Indian or Asian (3%)¹. Although there is a higher proportion of white students relative to the general population of Namibia, South Africa, and Zimbabwe, the sample was a reasonable representation of the student population at this institution.

Analysis

To compare the migration intentions of the three cohorts, we first looked at the internal structure of the questionnaire. Good internal reliability was shown for the four scales using Cronbach's alphas for all 939 participants (personal-emotional adjustment, $\alpha = .755$; social adjustment, $\alpha = .827$; academic adjustment, $\alpha = .718$; and attachment, $\alpha = .823$). A separate analysis of the three case countries equally indicated that the Cronbach alphas showed similar reliability. The SACQ questionnaire was then assessed using factor analysis, which portrayed good fit for all constructs.

Next, ANOVAs with partial eta squared were used to measure effect size, which are reported as either small (0.01), medium (0.09) or large (0.25). Bivariate analysis was conducted using Pearson's r to follow-up on the participants' demographic analysis. Logistic regression analysis was then undertaken with each of the eight migration intention variables as dependent variables, including the four blocks of citizenship and geolocation, education, socio-economic status, and demographics as independent variables.

¹ These four racial categories are defined by the South African government and were asked in accordance with the post-1994 legislation and regulatory frameworks in the country.

Results

Descriptive analysis of future migration intentions

RQ1 focused on the future migration intentions of students studying via internationalisation distance education. Figure 1 provides a descriptive overview across the 12 questions asked about future migration intentions, according to students' home country. Amongst the 607 questionnaire participants, we identified a complex and contradictory picture of students' future migration intentions. For example, 56% of Namibian participants aimed to work in Namibia after completing their degree, while 46% intended to study further by migrating to South Africa, which suggests overlap (i.e. students having intentions to both migrate *and* stay in their own country).

➔ Insert Figure 1

Our findings also illuminated subtle differences between the three countries. For example, Zimbabwean participants expressed greater intentions to study in South Africa (59%) or outside of Africa (17%), which was significantly more than those from Namibia (in South Africa: $T = 2.599, p < .01$; outside of Africa: $T = 3.029, p < .01$). Similar findings were identified in relation to future work intentions, where significantly more Zimbabwean participants than Namibians indicated that they wished to work in the future in South Africa ($T = 4.605, p < .01$) or another African country ($T = 3.043, p < .01$). Zimbabwean participants were also less likely to express desires to work in their own country (43%, $T = 2.506, p < .01$). Conversely, there were relatively more South African and Namibian participants in comparison to those from Zimbabwe who were unsure about their future migration intentions after their studies ($F = 10.898, p < .01, \eta^2 = .035$).

We also considered future migration intentions of South African students who were already living abroad and studying distantly back to their home country. We found that South African students living outside of South Africa had fewer plans to continue studying in South Africa (26%) relative to Namibian and Zimbabwean students ($F = 24.684, p < .01, \eta^2 = .076$). South African students were also more inclined, relative to the other two cohorts of students, to want to (continue to) work in a country outside Africa ($F = 16.439, p < .01, \eta^2 = .052$) and less inclined to work in Africa. This outlines an interesting area for future to research - understanding the motivations of students who do not intend to return to their home country, but nonetheless wish to obtain an education from there at a distance.

Cohort characteristics across the three countries

Before addressing RQ2, which considered what factors impacted upon international distance students' future migration intentions, we queried whether there were significant differences in cohort characteristics between the three countries. As indicated in Table 1a, international distance students

in Zimbabwe seemed better academically and socially adjusted and had a stronger attachment to UNISA than their peers in Namibia and South Africa, all with a small to medium effect size. Namibian students reported similar academic and social adjustment scores as South Africans living abroad, but with the notable exception of a stronger attachment towards UNISA.

➔ Insert Table 1a about here

As indicated in Table 1b, Namibian students were more likely to have a previous university qualification relative to the other two cohorts (63%, $F = 10.882$, $p < .01$, $\eta^2 = .036$). We also found differences in the areas of specialisations for students' study, with Zimbabwean participants more likely to study law (37%) or business (31%) and South African participants more likely to study social sciences or arts. Thus, one consideration for future research might be to explore the link between future professional roles and migration intentions. Finally, South African participants were also more likely to study full time (18%) relative to the other two cohorts, and were less likely to be in full-time work (66%).

➔ Insert Table 1b about here

In terms of socio-economic variables, as indicated in Table 1c, Zimbabweans had lower access to technology and fewer had at least one parent who went to university (29%). Zimbabweans were also more frequently responsible for supporting larger households. As such, one consideration might be whether future migration is reflected on by international distance students as providing more opportunities for social mobility. Nonetheless, in all three cohorts the vast majority of students had good to very good access to technologies and resources required for studying. This builds off of previous evidence from this project (Author C, 2020), which outlined that international distance students studying through UNISA typically possess a certain level of socioeconomic privilege.

➔ Insert Table 1c about here

Finally, Table 1d outlines the demographic differences between the three countries. Zimbabwean students were relatively older in comparison to the other two cohorts ($F = 6.996$, $p < .01$, $\eta^2 = .023$). South African participants were also more likely to be women ($F = 4.350$, $p < .05$, $\eta^2 = .014$) and white ($F = 133.101$, $p < .01$, $\eta^2 = .307$) compared to students in Zimbabwe or Namibia.

➔ Insert Table 1d about here

In other words, across the three cohorts there were substantial differences in terms of educational background, socioeconomic status, and demographic characteristics. Relative to the other two groups, one could argue that international distance students from South Africa represented a relatively more privileged cohort of middle class, white migrants with family histories in higher education. In contrast, most Namibian and Zimbabwean participants were non-mobile working professionals who were more likely to be first generation university students.

Modelling future migration intentions

With these descriptions in mind, we addressed RQ2 through eight regression models of the characteristics that may shape students' future migration intentions. The models showed variations in intentions by destination (within Africa; outside Africa) and purpose (study; work), displaying a mixture of professional, social, and personal impacting factors. In all eight models, we opted to use the largest respective category as the benchmark. Overall, between 16% - 35% of the variance was explained for the eight future migration intentions, whereby we have highlighted significant effects in Table 2 and 3.

Future study migration intentions

Table 2 reports the four logistical regressions of future migration study intentions (Model 1-4). Model 1 explored the variables influencing participants' future intentions to study further in their respective home countries. In contrast to our expectations, students' academic and social adjustment did not significantly predict students' intentions to continue to study in their home country. However, there were several factors that did seem to impact future migration intentions, including academic major (with those studying computer science more inclined to migrate for future study), country of origin (with South African students less inclined to study in their own country in the future), and race (with Black students more inclined to migrate for future study). Proxies for socio-economic status (including access to a quiet study space and educational histories of parents) also led to less interest in future migration for study. This, again, suggests considerations for whether students might believe there is a link between future migration for study and increased opportunity.

Model 2 outlined the characteristics of those who indicated they would like to study in South Africa in the future (the location of UNISA). We found students with lower more emotional adjustment scores were slightly more inclined to wish to study in South Africa. One explanation for this could be that physical distance from the university is viewed as a barrier (as in our previous work, Author A, 2020). Students with a stronger attachment towards UNISA were also more interested in continuing

their studies in South Africa. In terms of education and work, students studying law were less likely to want to continue to study in South Africa. Furthermore, as in Model 1, race was a significant factor, whereby white and Coloured students were less likely to wish to continue to study in South Africa compared to Black students. Furthermore, older learners and women were more inclined to state intent to study afterwards in South Africa.

Model 3 predicted the characteristics of those stating they would like to study further in another African country (beyond their own country or South Africa). Perhaps surprisingly, only two variables seemed to significantly predict Model 3, namely students studying at Level 4 and participants taking care of family at home. This could potentially be explained by the small response rate in this category, thereby making it difficult to fit an appropriate model. This is a potential area for further investigation.

Finally, in Model 4, four variables significantly predicted participants' future intentions to study outside of Africa. In particular, students who were already slightly further in their study (in Level 2 or Level 4), younger participants, and women were more likely to express these intentions. This might reflect the flexibility of younger future migrants' willingness to consider migration beyond Africa, in line with the findings by Author C (2019b).

➔ Insert Table 2 about here

Future work migration intentions

Table 3 reports the four logistical regressions of future migration work intentions (Model 5-8). Model 5 explored the variables influencing participants' future intention to work in their home countries, which outlines a range of significant variables. Participants who had a higher academic adjustment were more likely to want to work in their home country and, given the territorially-specific nature of law, it would seem logical that those who study law would want to practice in their own country. Furthermore, participants who had family commitments were more likely to want to work in their home country. Namibian participants and those who had lived longer in their current country were also more likely to continue working there, relative to the benchmark of South Africans living abroad.

Model 6 indicated a range of factors impacting why some students prefer to work in South Africa after completing their degree at UNISA. Students with interest in working in South African were those with a strong attachment to UNISA, women, those with relatively high socio-economic standing

(i.e., at least one parent went to university and those with access to a quiet working space at home), and those who had more people in their family for whom they were financially responsible. In contrast, Namibian participants were less likely to want to work in South Africa. Furthermore, those with a previous university education were less likely to opt for this migration intention.

In terms of working in another country in Africa, as indicated in Model 7, students based in Zimbabwe was the only significant predictive variable. None of the other factors seemed to significantly predict participants' future migration intentions to work in another African country. This might indicate that Zimbabwean participants were more flexible in terms of their future migration intentions, either to work in Zimbabwe, South Africa, or somewhere else in Africa. It reflects the economic and political uncertainties in the country which means that Zimbabwean students were seeking to leave the country irrespective of destination (De Jager & Musuva, 2016).

Finally, several factors significantly predicted participants' intentions to work outside of Africa (Model 8). Students with higher social adjustment scores were more inclined to work outside Africa, meaning those who were more connected to peers based around the world. Furthermore, students studying at level 2, 3 and/or level 5 were more inclined to select this future migration intention, indicating that those who were already further in their degree programme were more inclined to work outside Africa. Furthermore, in terms of socioeconomic factors, students with more access to resources (i.e. a quiet workspace) were more inclined to select this work intention. Finally, younger participants were more inclined to indicate that they intended to work abroad. In other words, more privileged and younger participants who had already completed a substantial part of their study were interested in working outside of Africa.

Overall, our findings indicated that a myriad of personal and demographic factors seemed to influence the future migration intentions of Namibian, South African, and Zimbabwean students in their future work or study in their home country, (South) Africa, or elsewhere. In particular, there were notable differences between the three cohorts, which we will unpack next in the discussion.

Discussion

In recent years, there has been growing scholarly attention on students' migration intentions (e.g. Chort, 2014; Crush et al., 2016; Williams et al., 2018). This research builds on this foundation by developing our understanding of this phenomenon in the case of international distance education, a topic which thus far has remained absent from the literature despite significant growth in distance education provisions and student numbers (Escher et al., 2014). We have shown the extent to which

distance education influences or disrupts students' migration intentions, which provides a significant contribution in light of growing distance learning provisions in a post-COVID world.

For RQ1, we have outlined international distance students' complex future migration intentions, which showed substantial differences depending on their country of origin and migration histories. For example, the majority of Zimbabwean participants wanted to study and/or work in South Africa or outside of Africa, which was significantly more than Namibian or South African students. This intention to migrate could perhaps be explained by the ongoing political and economic crisis in Zimbabwe (De Jager & Musuva, 2016). This finding seems to further suggest the important role of place: students' future migration intentions go beyond their role as merely students and are impacted by the context in which they currently live. This brings up a number of questions for future research to reflect on context-specific factors that influence international distance students in different countries through analysing the external (political, societal, social, familial, etc.) factors that influence their potential envisioned migrations.

Our findings also identified an interesting cohort worthy of further study: that of South African migrants living outside of South Africa, who did not intend to move back but nonetheless sought a distance education from their home country. This perhaps builds on notions of internationalisation at a distance (Author A, 2020) through considerations for how distance education might provide pathways for 'internationalisation back home'. One consideration might be that studying in a new context requires stepping outside of one's 'comfort zone', as indicated in research on international students in face-to-face contexts (Prazeres, 2017). However, this remains a significant question for future research: Why would international distance education students choose to study from their country of origin rather than their country of residence?

RQ2 explored the underlying factors that influence migration intentions, in line with Alberts and Hazen (2005). An interesting difference between the three cohorts was the relation between migration intentions and the subject the participants were studying. Law students, for example, showed limited intention to migrate, perhaps because law is often country-specific. However, the common history of British colonialism and South African rule over Namibia meant that there were also enough commonalities for international distance learning for law to remain relevant, again speaking to contextual influences over migration intentions. There were also differences between countries in the subjects studied, with Namibian and Zimbabwean participants more prevalently studying business and South African more widely studying the social sciences. The value of international business

education for careers has been noted globally (Mintzberg, 2004), but the role of regional hubs in providing this education is a particularly notable finding. This could also point to a more focused interest on business skills in the Global South for career progression, while South African international migrants were already mobile and perhaps more willing to follow degrees less directly associated with a specific, 'lucrative' career.

Based on prior research (Akl et al., 2008; King & Sondhi, 2018; Lu et al., 2009), we expected that there would be strong differences between students based on socioeconomic variables. However, we found that only a few variables could predict students' future migration intentions, namely that students who had access to a quiet working space and had a parent who went to university were less likely to desire future mobility. As these two variables are proxies for a more privileged socioeconomic status, one argument could be that the drive for future migration is more strongly influenced by 'push' factors rather than 'pull' factors (Nguyen et al., 2008). For instance, those with fewer current resources may idealistically view mobility as a means for obtaining future resources. This would help explain the greater future mobility intentions of students from Namibia and Zimbabwe, as they did not already have lived migration experiences compared to the South Africans already living internationally. However, this is an area deserving of follow-up qualitative research to more fully understand the connection between socioeconomic status and migration intention in distance learning contexts.

Linking back to brain drain, it seems possible that international distance education can have both positive and negative influences on future migration intentions, depending on students' personal, professional, and social factors. For most groups of Zimbabwean and Namibian learners in our study, the opportunity to study a specific disciplinary degree at a distance provided opportunities to develop human and social capital, while at the same time allowing them to continue working in their own country. In other words, for many students, international distance education provided a platform for capacity building and development while remaining at home and in their chosen profession. Yet, a significant number of international distance learners in our study still intended to move abroad for ongoing study or work in the future, meaning international distance education is not viewed by students as wholly a means to 'stay home'. Future research can build on this by determining whether such intentions are idealised or actualised, but our findings contribute that the intention remains clear: many international distance education students in Africa still hope to be internationally mobile in the future.

Limitations

We recognise the main limitation of our study is the use of self-reported data, as participants might not accurately predict their future migration behaviours. However, our work builds on previous literature, which acknowledges the value in understanding and unpacking students' future migration intentions not as a behavioural prediction, but as an insight into students' realised future possibilities (Chort, 2014). In terms of our framing through the lens of brain drain, our work has provided a foundation for understanding the extent to which distance education provides a realised opportunity for future skilled migration. Future research can build on this through measuring longitudinal data of post-study migration for international distance learners or through investigations of lived experiences using qualitative data collection, such as interviews or critical event recalls. We also were unable to go into great depth about the contextual factors that impacted on experiences in each individual country or context, which is a suggestion for future research to build on this work.

Another limitation of our study is the repeated use of logistic regressions for the eight migration intentions. As cluster analyses (not illustrated) indicated no clear or common patterns in participants' migration intentions, this meant that we could not just focus on a single domain (i.e. study OR work intentions). As evidenced by the complex narratives and significant differences across the eight models, participants seemed to make informed decisions whether or not to stay in their local community or to migrate, which were related to their personal, professional and social factors.

Conclusion

The global demand for skills has influenced the rapid rise in international student migration, particularly for students from the Global South. In recent years, concerns have been raised that international student migration contributes to the phenomenon of brain drain through their recruitment to common host countries in the Global North. Yet, international distance education represents a potentially disruptive shift to recent trends by providing opportunities to receive an international education while remaining 'at home'. We believe our findings are the first to evaluate the link between international distance education and students' future migration intentions, contributing a foundational understanding to the complex relationship between distance education and brain drain. While distance education provides an impetus for some international students to remain at home, there are other cohorts who may envision such provisions as a potential future opportunity to go.

References

- Akl, E. A., Maroun, N., Major, S., Afif, C., Abdo, A., Choucair, J., Sakr, M., Li, C.K., Grant, B.J.B. & Schünemann, H.J. (2008). Post-Graduation Migration Intentions of Students of Lebanese Medical Schools: A Survey Study. *BMC Public Health*, 8, 191.
- Alberts, H. C., & Hazen, H. (2005). ““There Are Always Two Voices...”: International Students’ Intentions to Stay in the United States or Return to Their Home Countries’. *International Migration*, 43(3), 131–54.
- Baker, R. W., & Siryk, B. (1989). *Student Adaptation to College Questionnaire (SACQ)*. Western Psychological Services.
- Burch, V. C., McKinley, D., van Wyk, J., Kiguli-Walube, S., Cameron, D., Cilliers, F.J., Longombe, A. O. et al. (2011). Career Intentions of Medical Students Trained in Six Sub-Saharan African Countries. *Education for Health*, 24(3), 614.
- Capuano, S., & Marfouk, A. (2013). African Brain Drain and Its Impact on Source Countries: What Do We Know and What Do We Need to Know? *Journal of Comparative Policy Analysis: Research and Practice*, 15(4), 297–314.
- Chort, I. (2014). Mexican Migrants to the US: What Do Unrealized Migration Intentions Tell Us About Gender Inequalities? *World Development*, 59: 535–52.
- Credé, M., & Niehorster, S. (2012). Adjustment to College as Measured by the Student Adaptation to College Questionnaire: A Quantitative Review of Its Structure and Relationships with Correlates and Consequences. *Educational Psychology Review*, 24(1), 133–65.
- Crush, J., Chikanda, A., & Tawodzera, G. (2016). The Making of a Southern Diaspora: South- South Migration and Zimbabweans in South Africa. In *Diasporas, Development and Governance*, 221–83. Springer.
- Crush, J., & Pendleton, W. (2012). The Brain Drain Potential of Students in the African Health and Nonhealth Sectors. *International Journal of Population Research*, 1-10.
- Darvas, P., Shang, G., Shen, Y., & Bilal, B. (2017). Sharing Higher Education’s Promise beyond the Few in Sub-Saharan Africa. World Bank. Available at: <http://documents.worldbank.org/curated/en/862691509089826066/Sharing-higher-education-s-promise-beyond-the-few-in-Sub-Saharan-Africa>.
- Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19. *Journal of Educational Technology Systems*, 49(1), 5-22.
- De Jager, N., & Musuva, C. (2016). The Influx of Zimbabweans into South Africa: A Crisis of Governance That Spills Over. *Africa Review* 81(8), 15–30.
- Docquier, F., & Rapoport, H. (2012). Globalization, Brain Drain, and Development. *Journal of Economic Literature*, 50(3), 681–730.
- Dovlo, D. (2004). The Brain Drain in Africa: An Emerging Challenge to Health Professionals’ Education. *JHEA/RESA*, 2(3), 1–18.
- Dziwornu, M. G., Yakar, M., & Temurcin, K. (2016). Migration Intentions of International Students in Turkey: A Case Study of African Students at Süleyman Demirel University. *SDU Faculty of Arts and Sciences Journal of Social Sciences*, 38, 227–49.
- Escher, G., Noukakis, D., & Aebischer, P. (2014). Boosting Higher Education in Africa through Shared Massive Open Online Courses (MOOCs). *Revue Internationale de Politique de Développement*, 5(1).
- Geddie, K. (2013). The Transnational Ties That Bind: Relationship Considerations for Graduating International Science and Engineering Research Students. *Population, Space and Place*, 19(2), 196–208.
- George, G., & Reardon, C. (2013). Preparing for Export? Medical and Nursing Student Migration Intentions Post-Qualification in South Africa. *African Journal of Primary Health Care & Family Medicine*, 5(1), e1–9.

- Gu, Q., & Schweisfurth, M. (2015). Transnational Connections, Competences and Identities: Experiences of Chinese International Students after Their Return "Home". *British Educational Research Journal*, 41(6), 947–70.
- Gubhaju, B., & De Jong, G. (2009). Individual versus Household Migration Decision Rules: Gender and Marital Status Differences in Intentions to Migrate in South Africa. *International Migration*, 47(1), 31-62.
- Hyams-Ssekasi, D. (2012). The Transition of International Sub-Saharan African Students into the UK University System with Reference to a University in the North of England. Doctoral thesis, University of Huddersfield. Available at: <http://eprints.hud.ac.uk/id/eprint/16428/>
- Ivlevs, A., & King, R. (2012). Family Migration Capital and Migration Intentions. *Journal of Family and Economic Issues*, 33(1), 118–29.
- Jones, E. (2017). Problematising and reimagining the notion of 'international student experience'. *Studies in Higher Education*, 42(5), 933-943.
- King, R., & Sondhi, G. (2018). International student migration: A comparison of UK and Indian students' motivations for studying abroad. *Globalisation, Societies, and Education*, 16(2), 176-191.
- Lareau, A. (1987). Social Class Differences in Family-School Relationships: The Importance of Cultural Capital. *Sociology of Education*, 73–85.
- Lee, J.J., & Sehoole, C. (2015). Regional, Continental, and Global Mobility to an Emerging Economy: The Case of South Africa. *Higher Education*, 70(5), 827–43.
- Li, M., Olson, J.E., & Hanson Frieze, I. (2013). Students' Study Abroad Plans: The Influence of Motivational and Personality Factors, *Frontiers: The Interdisciplinary Journal of Study Abroad*, 23, 733-89.
- Lu, Y., Zong, L., & Schissel, B. (2009). To Stay or Return: Migration Intentions of Students from People's Republic of China in Saskatchewan, Canada. *Journal of International Migration and Integration*, 10(3), 283–310.
- Maharaj, B. (2014). The African Brain Drain: Causes, Costs, and Consequences. In *Global Diasporas and Development: Socioeconomic, Cultural, and Policy Perspectives*, edited by S. Sahoo and B.K. Pattanaik, 121–38. Springer India.
- Manchin, M., & Orzabayev, S. (2018). Social Networks and the Intention to Migrate. *World Development*, 109, 360–74.
- McGill, J. (2018). The Migration of International Graduates: Intentions, Outcomes, and Implications. *Journal of Studies in International Education* 22(4), 334–58.
- Migration Data Portal (2021). *Types of migration: International students*. Available at: <https://migrationdataportal.org/themes/international-students> (accessed 26 February 2021).
- Mintzberg, H. (2004). Leadership and Management Development: An Afterword. *Academy of Management Perspectives*, 18(3), 140–42.
- Mountford, A. & Rapoport, H. (2011). The Brain Drain and the World Distribution of Income. *Journal of Development Economics*, 95(1), 4–17.
- Nulty, D.D. (2008). The adequacy of response rates to online and paper surveys: What can be done? *Assessment & Evaluation in Higher Education*, 33(3), 301-314.
- Nguyen, L., Ropers, S., Nderitu, E., Zuyderduin, A., Luboga, S., & Hagopian, A. (2008). Intent to Migrate among Nursing Students in Uganda: Measures of the Brain Drain in the next Generation of Health Professionals. *Human Resources for Health*, 6(1).
- OECD (2021). *International student mobility*. Available at: <https://data.oecd.org/students/international-student-mobility.htm> (accessed 26 February 2021).
- Paile, P., & Fatoki, O. (2014). The Determinants of Return and Non-Return Intentions of International Students in South Africa. *International Journal of Educational Science*, 6(3), 369–73.
- Prazeres, L. (2017). Challenging the comfort zone: self-discovery, everyday practice, and international student mobility to the Global South. *Mobilities*, 12(6), 908-923.

- Qayyum, A., & Zawacki-Richter, O. (2019). The State of Open and Distance Education. In *Open and Distance Education in Asia, Africa and the Middle East*, edited by O. Zawacki-Richter and A. Qayyum, 125–40. Springer Singapore.
- Sehoole, C. T. (2011). Student Mobility and Doctoral Education in South Africa. *Perspectives in Education*, 29(1), 53–63.
- Sommer, M., & Dumont, K. (2011). Psychosocial Factors Predicting Academic Performance of Students at a Historically Disadvantaged University. *South African Journal of Psychology*, 41(3), 386–395.
- Tait, A. (2018). Open universities: The next phase. *Asian Association of Open Universities Journal*, 13(1), 13–23.
- Tinto, V. (1975). Dropout from Higher Education: A Theoretical Synthesis of Recent Research. *Review of Educational Research*, 45(1), 89–125.
- Toma, S., & Villares-Varela, M. (2019). The Role of Migration Policies in the Attraction and Retention of International Talent: The Case of Indian Researchers. *Sociology*, 53(1), 52–68.
- Tyson, A. (2018). *The Political Economy of Brain Drain and Talent Capture: Evidence from Malaysia and Singapore*. Routledge.
- Williams, A.M., Jephcote, C., Janta, H., & Li, G. (2018). The migration intentions of young adults in Europe: A comparative, multilevel analysis. *Population, Space, & Place*, 24(1), e2123.
- Yuan, T. (2019). Revisiting China's Africa Policies and Educational Promises: Towards a Global Convergence of Development in the Post-2015 Era? *Globalisation, Societies and Education*.
- Zuk, P., Zuk, P., Lisiewicz-Jakubazko, J. (2019). Labour migration of doctors and nurses and the impact on the quality of health care in Eastern European countries: The case of Poland. *The Economic and Labour Relations Review*, 30(2), 307–320.

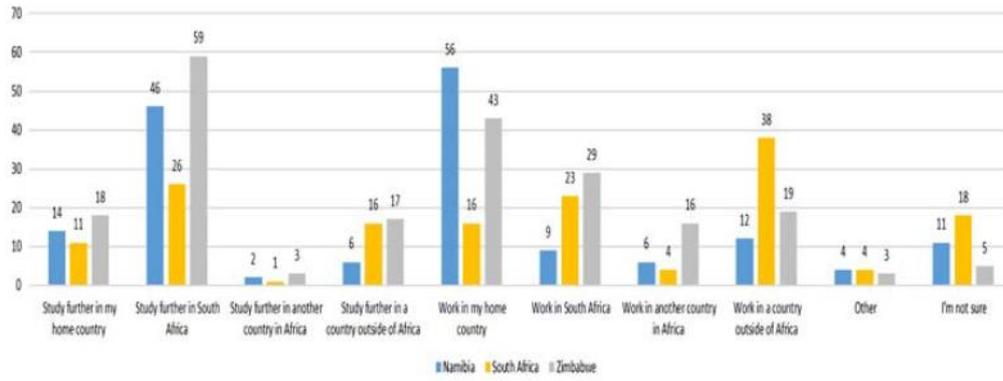


Figure 1. International distance education students' future migration intentions after completing their degree (Namibia, South Africa, Zimbabwe). Note: As the questions allowed students to respond to both future work and migration intentions, these categories were not exclusionary (thus the percentages do not add up to 100%).

Table 1. Cohort characteristics in Namibia, South Africa, and Zimbabwe.

a Adjustment scale scores (1 - 9 Likert scale)									
	Namibia		South Africa		Zimbabwe		F	P	Eta
	Mean	SD	M	SD	M	SD			
Academic Adjustment scale score	6.04	1.12	6.06	1.08	6.45	1.04	10.229	.000***	.033
Social Adjustment scale score	5.13	1.40	5.08	1.31	5.50	1.57	5.704	.004**	.019
Emotional Adjustment scale score	6.02	1.59	6.14	1.66	6.34	1.61	2.142	.118	.007
Attachment scale score	7.41	1.34	6.81	1.55	7.90	1.03	39.359	.000***	.115

b Education and work for Namibia, South Africa, and Zimbabwe (in %)									
	Namibia		South Africa		Zimbabwe		F	p	Eta
	M	SD	M	SD	M	SD			
Previous university qualification	63.00	48.40	41.00	49.40	40.00	49.10	10.882	.000***	.036
Current study subject: Arts	1.44	11.95	7.64	26.65	1.29	11.29	8.235	.000***	.027
Current study subject: Business	35.25	47.95	18.47	38.89	31.19	46.40	6.012	.003**	.020
Current study subject: Computing	4.32	20.40	3.18	17.62	3.54	18.50	0.142	.868	.000
Current study subject: Nursing & health	2.16	14.58	5.10	22.06	4.82	21.46	1.001	.368	.003
Current study subject: Law	22.30	41.78	12.10	32.72	37.30	48.44	18.843	.000***	.059
Current study subject: Science	15.83	36.63	5.73	23.32	6.75	25.13	6.232	.002**	.020
Current study subject: Social science	15.11	35.94	42.68	49.62	13.18	33.89	32.081	.000***	.096
Current study subject: Other	1.44	11.95	1.27	11.25	0.00	0.00	2.135	.119	.007
Study Level 1	34.53	47.72	27.39	44.74	35.05	47.79	1.488	.227	.005
Study Level 2	20.86	40.78	23.57	42.58	19.94	40.02	0.415	.661	.001
Study Level 3	25.90	43.97	38.85	48.90	32.48	46.90	2.83	.060	.009
Study Level 4	8.63	28.19	2.55	15.81	6.11	23.99	2.591	.076	.009
Study Level 5	10.07	30.21	7.64	26.65	3.22	17.67	4.652	.010**	.015
Full-time student	6.00	23.40	18.00	38.40	11.00	31.30	5.454	.004**	.018
Full-time work	80.00	40.30	66.00	47.70	73.00	44.50	3.815	.023*	.012
In part-time work	11.00	31.10	11.00	31.20	9.00	28.70	0.277	.758	.001
Full-time looking after the family/home	7.00	25.90	14.00	34.80	12.00	32.40	1.792	.168	.006
Retired from paid work	1.00	8.50	1.00	8.00	0.00	0.00	1.06	0.347	003

c Socio-economic comparison across three cohorts									
	Namibia		South Africa		Zimbabwe		F	p	Eta
	Mean	SD	Mean	SD	Mean	SD			
Access to computer at home	82.00	38.50	95.00	22.10	81.00	39.10	8.417	.000***	.027
Internet access at home	63.00	48.40	87.00	33.50	60.00	49.00	19.245	.000***	.06
Quiet working space at home	59.00	49.40	84.00	36.70	59.00	49.30	17.381	.000***	.055
Mobile phone access	86.00	34.50	87.00	33.40	78.00	41.50	4.106	.017*	.013
At least one parent went to university	37.00	48.60	43.00	49.70	29.00	45.40	5.238	.006**	.017
Number of people financially responsible for	2.80	2.14	1.90	1.95	3.45	1.95	31.38	.000***	.095
Number of people home is shared with	3.01	2.04	2.16	1.57	3.61	1.58	37.525	.000***	.112

d Demographic comparison across three cohorts									
	Namibia		South Africa		Zimbabwe		F	p	Eta
	Mean	SD	Mean	SD	Mean	SD			
Age	33.43	8.29	35.39	9.43	36.70	8.28	6.996	.001***	.023
Race: Black	55.00	50.00	15.00	46.00	64.00	26.30	256.262	.000***	.46
Race: Coloured	13.00	33.70	6.00	24.60	3.00	15.90	9.461	.000***	.031
Race: Indian or Asian	1.00	12.00	10.00	29.60	1.00	8.00	15.206	.000***	.048
Race: White	19.00	39.70	58.00	49.60	3.00	17.70	133.101	.000***	.307

N=607, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 2. Logistical regression of future migration study intentions.

	Model 1 Study further in my home country		Model 2 Study further in South Africa		Model 3 Study further in another country in Africa		Model 4 Study further in a country outside of Africa	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
1. Adjustment scores								
Academic Adjustment	-.162	.079	.238	.142	.088	.207	-.342	.181
Social Adjustment	.017	.096	.143	.077	.209	.256	-.008	.101
Emotional Adjustment	.006	.082	-.159*	.080	.002	.283	-.086	.102
Attachment	.098	.105	.163***	.112	-.283	.320	-.081	.111
2. Education and Work								
Previous university qualification	-.226	.285	-.233	.228	-.079	.827	-.153	.300
Current study subject: Arts	-18.079	9668.482	-.219	.671	-17.425	8793289	-.066	1.122
Current study subject: Computing	1.468*	.827	.060	.613	-18.075	7419416	-.066	.735
Current study subject: Nursing & health	-.643	.817	.157	.513	1.740	1488	.450	.651
Current study subject: Law	.254	.364	-.678*	.282	.088	.864	.488	.285
Current study subject: Science	.073	.487	.272	.405	-.488	1391	.621	.503
Current study subject: Social science	.297	.480	-.379	.318	-.249	1.128	.086	.410
Current study subject: Other	1.792	1.271	-20.199	19968.67	-17.206	8788360	-19.922	19788.721
Study Level 2	.264	.281	-.171	.281	.082	1.257	.015*	.372
Study Level 3	.293	.281	.073	.258	1.057	1.014	.688	.252
Study Level 4	-.661	.823	.822	.487	3.029***	1.265	1.204*	.269
Study Level 5	.563	.854	.637	.464	1.921	1.481	.573	.651
Full-time student	-.100	.488	.284	.359	-1.945	1.297	.582	.374
In part-time work	-.093	.487	.235	.357	.733	1.027	-.580	.503
Full-time looking after the family/home	.615	.381	-.243	.326	1.982*	.562	-.020	.414
3. Socio-economic								
Access to computer at home	-.004	.485	-.214	.324	1.289	1.026	.614	.567
Internet access at home	.528	.382	-.087	.260	-1.286	.811	.483	.372
	-.637*	.280	-.337	.242	-.220	.811	.078	.311
4. Home environment								
Quiet working space at home								
Mobile phone access	.127	.358	.301	.291	17.263	356652	.360	.453
At least one parent went to university	-.847**	.325	.088	.229	1.031	.762	.240	.290
Number of people financially responsible for	.117	.081	.079	.063	.213	.226	.020	.084
Number of people home is shared with	-.067	.088	-.009	.070	-.265	.253	.088	.091
Living in Namibia	-1.109*	.569	-.409	.415	-.309	1.495	-.856	.564
Living in Zimbabwe	-.967*	.487	-.449	.386	-.110	1.261	.080	.477
Number of years in current country	.030	.022	.027	.016	.088	.062	-.022	.020
4. Demographics								
Age	-.013	.017	.028*	.014	.004	.049	-.05**	.019
Gender	-.139	.277	.697**	.222	1.074	.787	-.366*	.293
Race: Coloured	-1.599*	.386	-.368	.448	.987	1.414	-0.085	.468
Race: Indian or Asian	-1.061	.380	-.779	.636	-15.282	7889744	-0.903	.522
Race: White	-1.227*	.327	-1.694***	.380	.293	1.379	-0.416	.462
Constant	-.821	1.208	-4.897	1.013	-25.512	3540.522	-2.625	1.211
R ² Nagelkerke	6.0%		25.4%		30.2%		16.7%	

n = 569 In terms of the benchmark group, we selected the largest group, i.e., Black South African, Business, Level 1, Part-Time student

Table 3. Logistical regression of future migration work intentions.

	Model 5 Work in my home country		Model 6 Work in South Africa		Model 7 Work in another country in Africa		Model 8 Work in a country outside of Africa	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
1. Adjustment scales								
Academic Adjustment	.267*	.137	-.205	.158	-.027	.193	-.192	.155
Social Adjustment	.029	.075	.121	.086	.127	.111	.174*	.090
Emotional Adjustment	-.122	.078	-.125	.088	-.141	.114	.089	.089
Academics	-.103	.105	.460**	.136	-.125	.150	-.108	.110
2. Education and Work								
Post-sec university qualification	.003	.217	-.665**	.252	-.289	.336	-.141	.254
Current study subject: Arts	.547	.662	-1.340	1.096	.833	.914	.697	.671
Current study subject: Computing	.259	.538	-.411	.613	.646	.715	.718	.596
Current study subject: Nursing & health	.527	.492	-.714	.625	-.233	.735	-.284	.581
Current study subject: Law	.788**	.266	-.068	.302	-.002	.412	.338	.326
Current study subject: Science	.387	.366	-.432	.452	.830	.521	.316	.448
Current study subject: Social science	-.103	.320	-.223	.350	.100	.493	.013	.343
Current study subject: Other	-.364	1.286	-19.646	18365.682	-17.825	18960.016	-.39	1.222
Study Level 2	-.018	.278	-.198	.316	.303	.417	1.117**	.323
Study Level 3	-.267	.248	-.286	.276	.298	.378	.641*	.312
Study Level 4	-.541	.460	-.320	.615	.678	.618	.679	.573
Study Level 5	.443	.446	.320	.554	.536	.734	1.594**	.485
Full-time student	-.103	.346	-.011	.387	.108	.498	-.073	.350
Part-time work	.074	.340	.319	.372	.409	.460	.068	.369
Full-time looking after the family/home	.772*	.320	.625	.353	-.048	.490	.039	.372
3. Socio-economic								
Access to computer at home	.421	.315	-.088	.366	.586	.520	.429	.446
Internet access at home	-.130	.294	-.398	.292	-.512	.359	-.059	.317
Quiet working space at home	.225	.232	.614*	.277	.437	.355	.873**	.311
Mobile phone access	.541	.397	.081	.324	-.440	.385	-.582	.340
At least one parent went to university	-.120	.228	.595*	.252	-.121	.330	.230	.248
Number of people financially responsible for	.128*	.060	.162*	.073	-.010	.092	-.068	.075
Number of people home is shared with	-.030	.069	-.126	.080	-.008	.103	-.014	.082
Living in Namibia	1.172**	.411	-2.061***	.509	.740	.722	-.595	.459
Living in Zimbabwe	.587	.352	-.698	.427	1.637*	.648	.355	.413
	.068**	.017	.027	.019	-.038	.022	-.034	.018
4. Demographics								
Age	.001	.016	.006	.015	.025	.019	-.048**	.016
Gender	.012	.216	.882***	.249	.410	.327	.117	.251
Race: Coloured	-.664	.498	1.246**	.484	-.426	.735	.629	.503
Race: Indian or Asian	1.154	.625	0.757	.645	-19.237	6805.673	.075	.636
Race: White	.213	.348	-.0351	.437	-.608	.619	.431	.373
Constant	-4.075	0.958	-3.58	1.148	-2.547	1.385	.680	1.007
R ² (Kaplan-Meier)	25.30%		23.30%		16.60%		23.50%	

n = 569. In terms of the benchmark group, we selected the largest group, i.e., Black South African, Business, Level 1, Part-Time student.