Identity continuity protects international student academic performance, retention, and life satisfaction: A longitudinal examination of the Social Identity Model of Identity Change

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Abstract

International students transitioning to university undergo dramatic changes in social identity, with a need to adapt to a new culture, language, environment, and way of living. This paper explores the impact of this social identity change on academic performance, academic retention, mental health and life satisfaction. The Social Identity Model of Identity Change (SIMIC) predicts that during life transitions of this form, an individual's group memberships and associated social identities can protect them from the negative effects of life change. This longitudinal study tested SIMIC among international students (N=210) transitioning to study overseas, with data collected at three time points across a Foundation Year programme in a large Australian university. Consistent with SIMIC, continuity of social identities predicted higher academic performance and better life satisfaction, and indirectly predicted student retention over time.

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Over their lifespan, people experience many life transitions, all of which require some form of adjustment. These life transitions can happen by choice (e.g., transitioning from high school to university, or retiring from the workforce), but can also be unplanned (e.g., losing one's job, or experiencing a debilitating injury). Life transitions can be a positive experience when individuals receive concrete benefits from the transition, such as gaining an opportunity to develop skills, acquiring new friends, or starting a new job. However, they can also be accompanied by feelings of stress, especially when the transition is associated with uncertainty about future prospects (Manzi, Vignoles, & Regalia, 2010). A substantial body of work shows that life transitions tend to have a negative impact on psychological well-being (e.g., Beadle, Ownsworth, Fleming, & Shum, 2016; Jetten, Haslam, Iyer, & Haslam, 2010). In particular, previous research indicates that the initial stages of adjustment are often accompanied by feelings of considerable stress (Miller, 2010). To examine these issues further, the present study explores how international students' social group memberships change over the course of their transition to study overseas and how these impact on their well-being, academic performance, and course completion.

The Social Identity Model of Identity Change (SIMIC)

According to the social identity approach (comprised of social identity theory, Tajfel & Turner, 1979, and self-categorization theory, Turner, Hogg, Oakes, Reicher & Wetherell, 1987; Turner, Oakes, Haslam & McGarty, 1994), people's sense of self is determined not only by their sense of themselves as individuals (their personal identity as "I" and "me"; Turner, 1982) but also by their sense of themselves as members of various social groups (their social identity as "we" and "us"; Tajfel, 1978). This speaks to the capacity for the self to be defined not just in terms of people's individuality but also by attributes and qualities that they share with other people (Turner, 1982).

When a person defines themselves (i.e., self-categorizes) in terms of social identity, they use their group membership as a lens through which to interpret and make sense of the world. This in turn has profound implications for perception, emotion, and behaviour (Abrams et al, 1990; Turner & Oakes, 1997).

In recent years, researchers have argued that the social identity approach has applied (and not just theoretical) utility, especially in health and organizational domains (Haslam, 2014). In particular, this is because group memberships, and the social identification that flows from them, are argued — and have been found — to be a robust predictor of a range of important outcomes, such as work performance (Ellemers, De Gilder, & Haslam, 2004), effective communication (Greenaway et al., 2015), and health and well-being (Jetten, Haslam & Haslam, 2012; Haslam, Jetten, Cruwys, Dingle, & Haslam, 2018). More specifically, people with stronger and more meaningful social ties tend to be more successful in achieving performance-based goals, to have an increased sense of personal control, and to be healthier and happier (Bluic et al., 2011; Greenaway, Cruwys, Haslam, & Jetten, 2016). By contrast, the lack or loss of group memberships has been shown to be an important predictor of depression in both clinical and non-clinical populations (Cruwys et al., 2014a; Sani, Madhok, Norbury, Dugard, & Wakefield, 2015; for a review see Cruwys, Haslam, Dingle, Haslam, & Jetten, 2014b). A key reason for this is that when people identify with a social group, this provides them with a sense of belonging, meaning, purpose and social support, all of which are psychological resources that have been found to contribute to good health and well-being (Haslam, Branscombe, Haslam, & Jetten, 2009). Indeed, a general point that emerges from other work informed by the *social identity approach to health* is that, all else being equal, social identification tends to have positive implications for health and well-being (Haslam et al., 2018; Haslam, Jetten, Postmes, & Haslam, 2009; Jetten et al., 2012).

Moreover, there is also evidence that the more groups a person identifies with, the better this is for their health (Cruwys et al., 2013; Iyer et al., 2009; Sani et al., 2015). A key reason for this is

that, as noted above, internalized group memberships are a source of social psychological resources

that help people to tackle various life challenges. Accordingly, it should generally be the case that

the more of these resources a person has, the better equipped they are to confront those challenges.

Indeed, if an individual has only a single source of social identity, this puts them in a vulnerable

situation because they are psychologically invested in just one group membership — and so it is as if

all their psychological "eggs" were in the one basket. This is a source of vulnerability, because in the

event that that one source of identity is threatened or lost, they will have nothing to fall back on for

support. In contrast, having multiple group memberships provides various sources of psychological

resources and more bases of support for people to draw on, particularly in the event that some of

these groups become inaccessible (as is often the case in a life transition). This accords with

evidence from organisational contexts (Ashforth & Schinoff, 2016; Caza, Moss, & Vough 2017),

where multiple identities have been found to shape important outcomes, such as stress, well-being,

intergroup conflict, performance and change (Ramarajan, 2014).

      In line with the above reasoning, the benefits of multiple group memberships have received

particular attention in the context of *life transitions* (Jetten, Haslam, Haslam, & Branscombe, 2009;

Jetten, Haslam, Iyer & Haslam, 2010). Here, the resources provided by group memberships and

associated social identities (e.g., a sense of connection, meaning, support and control) are argued to

protect well-being and help individuals cope with, and adjust to, life changes (Sani, 2008).

Consistent with this proposition, multiple group memberships have been found to be important

predictors of health, well-being and life satisfaction outcomes for (a) patients recovering from

stroke (Haslam et al., 2008), (b) people who have been diagnosed with multiple sclerosis

(Tabuteau-Harrison, Haslam, & Mewse, 2016), (c) mothers (Seymour-Smith, Cruwys, Haslam, &

Brodribb, 2017), and (d) retirees (Steffens, Cruwys, Haslam, Jetten, & Haslam, 2016).

      These various insights have been integrated within the *social identity model of identity

change* (SIMIC; Haslam et al., 2018). Building upon the evidence of the benefits of multiple group

membership across diverse contexts, this model — which is represented schematically in Figure 1 — specifies two pathways through which social identities support positive adjustment. The first of these is a *social identity continuity pathway,* in which access to multiple group memberships prior to a transition protects life satisfaction during the transition because this increases the likelihood that a person will be able to maintain at least some of those group memberships after the transition — thereby facilitating a sense of *self-continuity* over the course of the transition (Jones & Jetten, 2011; Thoits, 1983).

The second pathway is a *social identity gain pathway* in which having multiple group memberships provides a platform for the acquisition of new identities after the transition. Conceptually, SIMIC states that having multiple groups prior to a life transition can support the development of new group memberships following the transition for at least two reasons. The first is that existing social networks can act as a scaffold to support people in forming new networks (along the lines of *bridging capital*; e.g., Iwase et al., 2010). For instance, if an international student is a churchgoer in their home country, they may be more likely to join a church in their host country; providing a potential basis for a new and valued identity. The second reason is that existing group memberships can provide people with the skills and resources necessary to develop group memberships in general. This latter mechanism is illustrated in a study of people experiencing homelessness (Cruwys, Dingle, Hornsey, Jetten, Oei & Walter, 2014c), which found that having positive social group experiences reduced maladaptive social schemas (e.g., the feeling that one is isolated from the rest of the world, different from other people, and/or not part of any group or community) that helped to increase people's social engagement with others and overcome barriers that undermine development of social connections.

These two SIMIC pathways have been supported by a large number of studies that have been conducted in clinical, organizational, and educational contexts (Cruwys et al., 2014c; Haslam et al., 2008; Iyer et al., 2009; Jetten, O' Brien, & Trindall, 2002; Seymour-Smith, Cruwys, Haslam,

& Brodribb, 2017; Steffens et al., 2016). For example, providing evidence for the continuity

pathway, one longitudinal study of over 400 retirees found that, after controlling for initial health,

age, gender, relationship status and socioeconomic status, maintenance of more social group

membership following transition to retirement was associated with better quality of life and lower

risk of premature death (Steffens et al., 2016). Particularly relevant to the present research is a study

which found that students adjusted better to life at university to the extent that they had multiple

group memberships prior to university and hence were more likely to retain some of those group

memberships in their new life (Iyer et al., 2009). This argument is further supported by longitudinal

evidence that maintaining group memberships protects international students against decline in

well-being as they adjust to their first semester of university (Praharso, Tear, & Cruwys, 2017).

Evidence for the social identity gain pathway is also provided by a study which found that the

acquisition of new social identities over a seven-month period was a positive predictor of students'

self-esteem, as well as their sense of belonging and meaning, which in turn, predicted reduced

depression (Greenaway et al., 2016, see also Hendrickson, Rosen, & Aune, 2011).

The case of international students

International students face considerable challenges from the time they leave their home

country. Living abroad in a new country typically involves adapting to a new culture and societal

norms, adjusting to a foreign language, coming to terms with changes in weather and climate,

different foods and eating habits, as well as unfamiliar cultural and religious influences in daily life.

Speaking to this point, one case study found that international students were confronted with

academic challenges, social isolation, and challenges of cultural adjustment on a daily basis (Wu,

Garza, & Guzman, 2015). All of these experiences can prove to be overwhelming (Gomes, Berry,

Alzougool, & Chang, 2014). Moreover, such difficulties reflect not only language and cultural

barriers which make integration difficult, but also the fact that international students can experience

rejection from members of the host culture (Brislin, 1990; Pedersen, 1991). In this vein, a range of

studies have found that international students routinely report being on the receiving end of racism, exclusion, and unfriendliness (Gu, Schweisfurth, & Day, 2010; Wang, Singh, Bird, & Ives, 2008). Consistent with this, a recent study of 900 international students in Australia found that 41% of international students experienced substantial levels of stress, usually due to homesickness, culture shocks, or perceived discrimination (Russell, Rosenthal, and Thomson, 2010). These various challenges faced by international students in turn also contribute to a reduced likelihood of academic retention (Morrow & Ackermann, 2012; Sun, Hagedorn, & Zhang, 2016; Wu et al., 2015).

Seeking to understand these various processes, numerous studies have tried to identify factors that support academic performance and wellbeing within the international student population (Li, Chen, & Duanmu, 2010; Ren & Hagedorn, 2012; Rienties et al., 2012). Here, researchers from a variety of theoretical and disciplinary perspectives have converged on social integration and social networks as key determinants of student adjustment (Li et al., 2010; Ren & Hagedorn, 2012; Rienties et al., 2012). International students tend to be less socially integrated than the rest of the university community and often do not forge any relationships with domestic students or others in their local community (Neri & Ville, 2008; Rienties, Beausaert, Grohnert, Niemantsverdriet, & Kommers, 2012). A large body of research speaks to the fact that this lack of social integration (whether at the university or local community level), is associated with higher stress, more depressive symptoms, poor sociocultural adjustment, and less access to social support (Jackson, Ray, & Bybell, 2013; Neri & Ville, 2008). Furthermore, social ties both within and outside the academic environments positively predict academic performance (Soledad, Carolina, Adelina, Fernández, and Fernanda, 2012; Rienties et al., 2012). More specifically, students (both international and domestic) who drop out of higher education often report that their social networks fail to provide sufficient support for them to continue their education (Christie, Munro, & Fisher, 2004). In contrast, having friends from the same culture as well as from local communities, sharing accommodation with other students, and being a member of a club or society, have each been found

to enhance social integration and support academic performance (Bok, 2009; Russell et al., 2010; Severiens & Wolff, 2008). In this way, it appears that students' outcomes are improved to the extent that they participate in student culture and are socially integrated both within and outside the immediate context of the learning environment (Tinto, 1998). While each of these studies have conceptualized social factors in different ways, all clearly highlight the centrality of social factors (broadly construed) to success in the context of this life transition.

What is lacking, however, is an integrated theoretical understanding of (a) how (and why) these various social factors hang together, and (b) how (and why) they feed into academic performance. Furthermore, to date there has been limited investigation of how academic performance and retention can be improved. In this study, we seek to use SIMIC as a theoretical framework to bridge this gap. This involves focusing on the particular role that social group memberships — and the sense of *social identity* that they give their members — play in protecting international students during their transition to overseas study, and, more specifically, on their contribution to academic performance, retention, mental health, and life satisfaction.

The present study

The present research seeks to provide a novel analysis of the challenges of international student adjustment using a social identity analysis. In particular, we test the two key pathways proposed by SIMIC in the context of an international student population undergoing life transition associated with moving overseas to study. While previous research (notably Praharso et al., 2017) has illustrated the importance of the social identity continuity pathway for mental health and life satisfaction, we extend this to examine the combined influence of both the social identity gain and social identity continuity pathways in supporting students through the transition. As in previous research, we distinguish between mental health (i.e., the absence of symptoms) and life satisfaction (i.e., flourishing) in recognition of the evidence that these constructs are distinct (e.g. Keynes, 2005). Indeed, international students are at risk both of failing to flourish and of developing mental health

symptoms such as anxiety, depression, and suicidality (Li, Chen, & Duanmu, 2010; Ren &

Hagedorn, 2012; Rienties et al., 2012). The present study also extends on previous outcome

evaluations to assess the relevance of SIMIC theorizing to academic performance and retention

— both of which are important indicators of adjustment and future professional success in this

population. Here we propose a novel theoretical extension of SIMIC in arguing that, just as social

identities have been found to predict performance and retention in organizational contexts (Cole &

Bunch, 2006), so too the model's pathways should predict performance and retention in the context

of educational transition.

  We report the findings of a longitudinal study conducted with international students from a

Foundation Year programme in a large Australian University (that we will hereafter refer to as

AUFY). AUFY is a bridging programme for international students that provides a foundation for

them to gain entry to an Australian university upon satisfactory completion of the programme.

During the time of data collection, these international students were newly arrived in Australia from

their home country, and had just begun their Foundation Year programme. The SIMIC framework

which we sought to test is outlined in full in Figure 2, with the focal hypotheses as follows:

  H1: Multiple group membership prior to transition (retrospectively recalled at T1) will

positively predict (a) greater maintenance of multiple group memberships following the transition

(T2) and (b) greater gain of new group memberships following the transition (T2).

  H2. Maintained group memberships (T2) will positively predict (a) life satisfaction (T2), (b)

academic performance (T2) and (c) mental health (T2).

  H3. New group memberships (T2) will positively predict (a) life satisfaction (T2), b)

academic performance (T2) and (c) mental health (T2).

  H4. Academic retention (T3) will be positively predicted by (a) life satisfaction, (b)

academic performance (T2) and (c) mental health (T2).

H5. Academic retention (T3) will be indirectly positively predicted by (a) greater maintenance of multiple group memberships (T2) and (b) greater gain of new group memberships (T2) via mediators of life satisfaction, academic performance and mental health at T2.

Method

Participants and Design

Participants were international students in a Foundation Year programme at a large Australian University (AUFY). Students were drawn from 19 different countries (China, Hong Kong, Malaysia, Singapore, Indonesia, Oman, Taiwan, Korea, Turkey, Ecuador, Macau, Vietnam, Kenya, Mozambique, Russia, Laos, Thailand, Mongolia and Saudi Arabia). The majority of students came to AUFY immediately after completing their secondary schooling in their home country. They were then recruited to participate in this study within the first week of starting at AUFY (usually, due to visa constraints, this was also their first one or two weeks of being in the country). Data were collected at three time points. Time 1 (T1) was in the first week of the academic year; Time 2 (T2) was at the end of their first semester, approximately 3 months later; Time 3 (T3) was at the end of the academic year (approximately 5 months after T2). At T1, the full cohort of 257 students were contacted to participate and 237 participants completed the survey (111 male and 126 females aged between 17 to 31, M=18.73). At T2, 210 participants had completed the survey across the first two time points (95 male and 115 female students aged 17 to 31, M=18.78; attrition rate=11%). Binary logistic regression analyses indicated that attrition at T2 was unrelated to our constructs of interest or demographic variables at T1.

Procedure

The study was approved by the relevant ethics committee at the authors' university (15-PSYCH-PHD-09-JH). International students studying in AUFY were recruited during their Academic English classes. The survey took around 20 minutes to complete. Participants were asked to complete the same survey at T1 and T2. At T2, participants' official academic performance was

also extracted from the AUFY student management system with their consent and matched with their survey data. At T3, academic records were accessed for the T2 participants to provide an indication of who had dropped out (vs. completed the full year of the program of study).

Measures

      Multiple group membership. A four-item scale adapted from Haslam and colleagues (2008) measured the degree to which respondents saw themselves as belonging to multiple social groups (e.g., "Before I became an AUFY student, I belonged to lots of different groups"; $\alpha_{T1} = .84$). Here and for all other social identity and life satisfaction measures, responses were made on seven-point scales (where 1 = "do not agree at all" and 7 = "completely agree"). Although this measure was included at both T1 and T2 (the survey was identical at each timepoint to simplify ethics and governance processes), it was only hypothesised to be relevant at T1 (i.e., immediately after participants had arrived in the country). Therefore, the T2 measure is not discussed further.

      Maintained group membership. A four-item scale from Haslam et al. (2008) measured the degree to which participants were able to maintain their pre-existing social group membership during the transition (e.g., "I continue to have strong ties with the same groups that I had ties with before I became an AUFY student"; $\alpha_{T1} = .78$; $\alpha_{T2} = .86$).

      New group membership. A four-item scale from Haslam et al. (2008) measured participants' strength of association with new social groups after their life transition (e.g., "After I became an AUFY student, I developed strong ties with one or more new groups"; $\alpha_{T1} = .92$; $\alpha_{T2} = .90$).

      Mental Health. This was assessed using the Depression Anxiety Stress Scale (Lovibond & Lovibond, 1995) comprising 21-items ($\alpha_{T1} = .92$; $\alpha_{T2} = .95$) that measure negative emotional states of depression, anxiety and stress. Participants rated the extent to which they had experienced a particular state over the course of the past week (e.g., "I found myself getting upset by quite trivial things", "I couldn't seem to experience any positive feeling at all", and "I felt scared without any

good reason"). Responses were made on four-point scales from 0 ("did not apply to me at all") to 3

("applied to me very much or most of the time"). As recommended by the scale authors, the

composite score was derived by summing the scores for depression, anxiety and stress items and

multiplying by two, to maintain comparability with the scoring of the full DASS-42 scale. This

scale was then reversed such that higher scores reflected better mental health.

Life satisfaction. The five-item Satisfaction with Life Scale was used to index this construct

(Diener, Larsen, Levine, and Emmons, 1985; $\alpha_{T1} = .82$; $\alpha_{T2} = .86$), e.g., "In most ways my life is

close to ideal".

Academic Performance. This was indexed by participants' Grade Point Average (GPA),

extracted from the official AUFY grading system at the end of Semester 1. GPA was calculated in

the standard fashion used by AUFY for Australian university entrance, which is an average across

their five AUFY subjects on a seven-point scale, where 7.0 is a perfect score and 4.0 is a pass.

Academic Retention. This was indicated by students' enrolment status at T3, as extracted

from the AUFY's student management system at the end of Semester 2 (where discontinued = 0,

completed course = 1).

Results

Table 1 presents the mean, standard deviation and bivariate correlations for all measures

across the 3 time points.

Analytic approach

Hypotheses were assessed using path analysis in AMOS to model all of the hypothesised

relationships simultaneously. Ten-thousand bootstrap trials were used to perform analyses and,

given the previously established validity and reliability of all our measures as well as their high

Cronbach's alphas in the present study, we modelled all constructs as manifest variables (Fritz &

MacKinnon, 2007).

The predictor variables in the model were: multiple group memberships prior to the

transition (T1), maintained group memberships post-transition (T2) and new group memberships

post-transition (T2). The outcome variables were (a) academic performance (T2), (b) mental health

(T2), (c) life satisfaction (T2), and academic retention (T3). In order to make best use of the data

available, the T1 measures of maintained and new group memberships, mental health, and life

satisfaction were all entered in the model as predictors of their T2 equivalent, and all T1 variables

were allowed to covary. Error terms were specified for the endogenous variables, and these were

not allowed to covary with the exception of maintained and acquired group memberships at T2,

which were theorised to develop in tandem.

First, we evaluated model fit. Model fit was considered in comparison to four alternative

plausible models that were not derived from SIMIC, but utilised the same variables. These were (1)

a *strict chronological* model, in which each T1 variable *only* predicted its T2 equivalent, which in

turn predicted academic retention at T3; (2) a *full cross-lagged* model, in which all T1 variables

predicted all T2 variables, which in turn predicted retention at T3; (3) an *inverted* model, in which

the predictor order of the T2 variables was reversed such that change in mental health, life

satisfaction, and GPA preceded change in maintained and acquired group memberships. We

consider this model to be a particularly good comparison to our theoretically-derived model, since it

contained the same number of pathways and had a similar structure, and (4) a *baseline group*

variables model, in which only T1 measures of the social identity variables were included, such that

these were treated as fixed at baseline rather than varying from T1 to T2. In all models, T1 variables

were allowed to covary with one another, and each T1 variable predicted its T2 equivalent. Full

details of the alternative models are provided in the supplementary appendix.

As can be seen from Table 2, our theoretically derived SIMIC model (beta coefficients

displayed in Figure 3) outperformed all four alternative models on the six model fit indices

(calculated and evaluated as recommended by Hu & Bentler, 1999). Specifically, the root mean

square error of approximation (RMSEA = .054), the standardized root mean square residual (SRMR

= .071), χ^2 (26) = 46.40, p = .021, goodness of fit index (GFI = .96), comparative fit index (CFI

= .96), and normed fit index (NFI = .91) all indicated that model fit was superior to that of the two

alternative models. Accordingly, the theoretically-derived SEM model based on SIMIC (presented

in Figure 3) was used for evaluating the hypotheses.

Tests of hypotheses

H1 proposed that multiple group membership prior to transition (retrospectively recalled at

T1) would positively predict (a) greater maintenance of multiple group memberships following the

transition (T2) and (b) greater gain of new group memberships following the transition (T2). H1a

was supported, with multiple group memberships at T1 significantly predicting maintained group

membership at T2 (β = .17, p = .016), while its association with new group memberships at T2 was

marginal (β = .13, p = .059).

H2 proposed that maintained group memberships (T2) would positively predict (a) life

satisfaction (T2), (b) academic performance (T2) and (c) mental health (T2). H2a and H2b were

supported, with maintained group membership at T2 predicting academic performance (β = .26, p

< .001) and life satisfaction (β = .13, p = .039) at T2. The relationship between maintained group

membership at T2 and mental health at T2 (β = .07, p = .212) was not significant.

H3 proposed that new group memberships (T2) would positively predict (a) life satisfaction

(T2), b) academic performance (T2) and (c) mental health (T2). This hypothesis was not supported,

with new group memberships at T2 unrelated to each of these outcomes.

H4 proposed that academic retention (T3) would be positively predicted by (a) life

satisfaction, (b) academic performance (T2) and (c) mental health (T2). H4b was supported:

academic performance at T2 (β = .68, p < .001), but not mental health (T2) (β = .03, p = .623) or

life satisfaction (T2) (β = -.05, p = .310), predicted academic retention at T3.

Finally, H5 proposed that academic retention (T3) would be indirectly positively predicted

by (a) greater maintenance of multiple group memberships (T2) and (b) greater gain of new group

memberships (T2) via mediators of life satisfaction, academic performance and mental health at T2. To test this proposition, we used Bayesian analyses treating retention as a true binary dependent variable (Albert & Chib, 1993). The results were equivalent to those of a standard SEM, and so we report the standard path analysis here. In support of H5a, the indirect effect of maintained group memberships at T2 on retention was significant ($\beta = .17$; $p = .001$). This suggests that the maintenance of multiple group memberships protected students from dropping out primarily due to their role in supporting better academic performance.

Discussion

The particular processes underpinning the academic and social integration of international students are not yet well understood within the higher education sector (Rienties et al., 2012). The present study sought to gain a better understanding of the ways in which group memberships and associated social identities are implicated in the success of students' transition to international study. More specifically, it sought to shed light on the way in which SIMIC's social identity continuity and social identity gain pathways might contribute to international students' academic performance, mental health, life satisfaction, and ultimately their retention.

The findings of this study are consistent with previous research which suggests that groups and associated social identities have an important role to play in protecting international students from the harmful effects of leaving their home country to pursue educational goals in a foreign country (Gomes et al., 2014; Gu et al., 2010; Khawaja & Dempsey, 2008). Specifically, we found evidence that having multiple group memberships *before* moving overseas increased the likelihood that students would have maintained some of these group memberships five months later (H1a). This in turn, was associated with higher levels of life satisfaction (H2a) and academic performance (H2b) at the same timepoint (controlling for baseline measures of all variables). This finding aligns with research showing that multiple group memberships and social identities can protect against some of the negative consequences of other life transitions such as the onset of a chronic health

condition (Clarke & Black, 2005; Cruwys et al., 2013; 2014a; Haslam et al., 2008), or change in employment status (Inceoglu, Selenko, McDowall, & Schlachter, 2019; Steffens et al., 2016). It also accords with cross-cultural studies which have found that multiple group memberships positively predict health and well-being during the transition to retirement in both Western and non-Western cultural contexts (Lam et al., 2018). According to social identity theorising, the key reason for this relationship is that social identities that are derived from group memberships provide people with access to key resources — notably a sense of social connection, support, meaning, and agency (e.g., see Cruwys et al., 2014b; Haslam et al., 2018; Jetten et al., 2014). It thus follows that the more of these that people are able to maintain in the course of a given life transition, the more resources they will have available to negotiate that transition successfully.

Supporting H5a, there was also clear evidence of an association between maintained group memberships at T2 and students' ability to complete their course of studies. This was driven indirectly via academic performance at T2, which was in turn a strong predictor of course completion at T3 (H4b). While previous experimental and survey research has established a close link between social identity processes and student life satisfaction and performance (e.g., see Mavor et al., 2017), to our knowledge, this is the first study to provide longitudinal evidence of the unfolding link between multiple group membership (T1) and long-term course completion (T3). Another point to note is that these protective factors occurred early on in the transition (i.e. within 6 months of arriving in the host country). Maintaining group memberships across the first six months of arrival was positively associated with life satisfaction and academic performance. A possible explanation could be that the students' connections to their friends and family post-transition positively buffered them from any negative consequences of the transition (which aligns with qualitative evidence; Ng, Haslam, Haslam, & Cruwys, 2018), providing reassurance that their supportive network back home is still intact and available whenever they needed help.

Nevertheless, a novel dimension of the present study is that it shows that, as well as affecting life satisfaction, maintained group memberships are also associated with academic performance and retention. This possibility is only hinted at in previous work (e.g., Iyer, et al., 2009), and it accords with findings from Severiens and Wolff (2008) who show that students who remain well connected to fellow students and teachers from school are more likely to achieve better academic results and to graduate from university. The present study extends these findings to show that other social relationships, particularly group memberships that are maintained over the course of life transition, have similar protective capacity.

At the same time, though, there was no evidence that the acquisition of new group memberships supported life satisfaction, mental health, or academic performance (H3). This was predicted on the basis of SIMIC's social identity gain pathway and evidence both that (a) new group memberships enhance students' self-esteem, sense of belonging, and mental health (Greenaway et al., 2016) and (b) new group-based social connections lead international students to be more satisfied, content, and less homesick (Hendrickson et al. (2011).

Precisely why there was little evidence of such relationships in the present data is unclear. One possible reason why multiple identities did not lead to identity gain could be that international students are more attuned to — and hence more affected by — the prospect of social identity loss (which would create a sense of discontinuity) than by that of social identity gain. This indeed is a similar pattern to that observed by Seymour-Smith et al. (2017) in a study of postpartum mothers, for whom maintained group memberships — but not new group memberships — were predictive of better mental health. In that study the authors argued that this may be because mothers' options for joining new social groups are restricted by having responsibilities for a newborn. In the current study context, similar reasoning might be applied — suggesting that students prioritise study over developing new relationships in ways that reduce their opportunities to reach out to new groups. Moreover, these participants have completed high school, started a new program of study, and

moved to a new country all in the space of a few months, and this major transition would be expected to cause substantial upheaval in their social networks. The failure to find support for a mediating role of new group membership also accords with evidence from a recent qualitative study showing that students were more focused on the need to stay connected to family and friends at home (and of the barriers to doing this) than they were on possibility of joining new groups; at least in the early stages of their time abroad (Ng et al., 2018). In part, this was because students reported needing to know that old identities were secure before feeling sufficiently confident to develop new ones. Another possibility is that the new group memberships that were available to these students were incompatible with their existing group memberships. Relatedly, it is also possible that international students do not prioritise joining new groups because they do not intend to stay in their host countries for very long. Perhaps later in the transition or among those students planning a longer stay in the country, new group memberships play a more important protective role. This is a possibility that could be explored in future research, to investigate whether the utility of the social identity gain pathway is moderated by the length of time that students intend to be away from their home country.

Practical implications

The above findings suggest that in order to understand how international students adapt to the identity changes they confront, it is important to be aware not only of the nature of their pre-existing social group networks and of the ways these will be affected by the transition, but also of how their new student identity fits with previously established groups and identities (Iyer et al., 2009). More specifically, our findings suggest that higher-education institutions which are seeking to improve overseas student retention (as most are) should attend to these identity dynamics and seek to develop and implement programmes that help international students maintain and consolidate group-based social connections from the very start of those students' time overseas. This is because when (and to the extent that) students have a strong network of social group

memberships and this is preserved across life transitions, it appears to increase the likelihood of them being able to cope with, and adjust to, change.

The importance of this point is reinforced by the fact that in the present study, the acquisition of new group memberships proved to be not as important for international students' adjustment as had been anticipated (e.g., following Hendrickson et al., 2011). While we are wary of reading too much into a null result, it is possible that for new students, maintaining group memberships may be more important than developing new ones — at least in the early stages of the transition. At the very least, then, this suggests that acculturation and orientation programs that draw students' attention to the possibility of joining news groups should be complemented by programs that emphasize the importance of maintaining their old social group ties and using these as a secure psychological platform from which to reach out to form fresh bonds with others in their new environment.

Limitations and directions for future research

In using longitudinal methodology, the present study advances on previous cross-sectional research in this area (e.g., Neri & Ville, 2008; Gu et al., 2010; Russell et al., 2010; Rienties et al., 2012; Wu et al., 2015), but it is nevertheless the case that its design does not allow us to make strong statements about causality. This is (a) because some of our measures relied on self-reported surveys that were completed in a classroom setting, and (b) the timepoint of measurements was not always ideal, with multiple group memberships prior to the transition measured retrospectively at T1, and the mediators measured at the same time as some outcome variables. For example, there was no time delay between the measure of maintained group memberships at T2 and the measure of mental health at T2. This design precludes any casual claims being made about these relationships (Maxwell & Cole, 2007), although we also note that the reverse causal direction was not supported in the alternative models that we tested (see Supplementary Materials).

However, these limitations are less applicable to indicators of academic performance and student retention, which were objective measures based on student records and together spanned three timepoints, and so it is a strength of this research that we were able to predict these outcomes. It is also the case that self-report is the most appropriate way to measure multiple group membership, since it is a person's subjective affiliation with these groups (i.e., social identification) that has been found to most strongly predict their wellbeing and behavioural outcomes (see Cruwys et al., 2016 for a discussion).

This study did not explore social identification with groups that are unlikely to have positive consequences on health and life satisfaction, such as those with unhealthy norms or which are stigmatised (Cruwys et al., 2014b). These are nevertheless relevant and may certainly influence outcomes in this population. Accordingly, this will be an important issue for follow-up research to explore. It would also be beneficial for future research to explore cultural factors that may affect these findings. For instance, some recent research has suggested that the benefits of multiple group membership for health are attenuated in collectivist cultures (Chang et al., 2016; Lam et al., 2018).

Future research might also benefit from designs that involve not only a greater number of survey waves but also experimental manipulations of identity continuity, with the aim of assaying the causal impact of this on student life satisfaction and performance. One further possibility here would be for this to take the form of *structured intervention*. An obvious candidate is the GROUPS 4 HEALTH program (Haslam, Cruwys, Haslam, Dingle, & Chang, 2016; Haslam, Cruwys, Chang, Bentley, Haslam, Dingle, & Jetten, 2019) and its adaptation to education in GROUPS 4 EDUCATION (Bentley, Greenaway, Haslam, & Haslam, 2019), as these directly target the two pathways specified within SIMIC. Implementing this would thus provide another important piece of a jigsaw which, together, presents an integrated and coherent picture of the various ways in which the alignment of old and new social identities underpins the experiences and outcomes of students living overseas.

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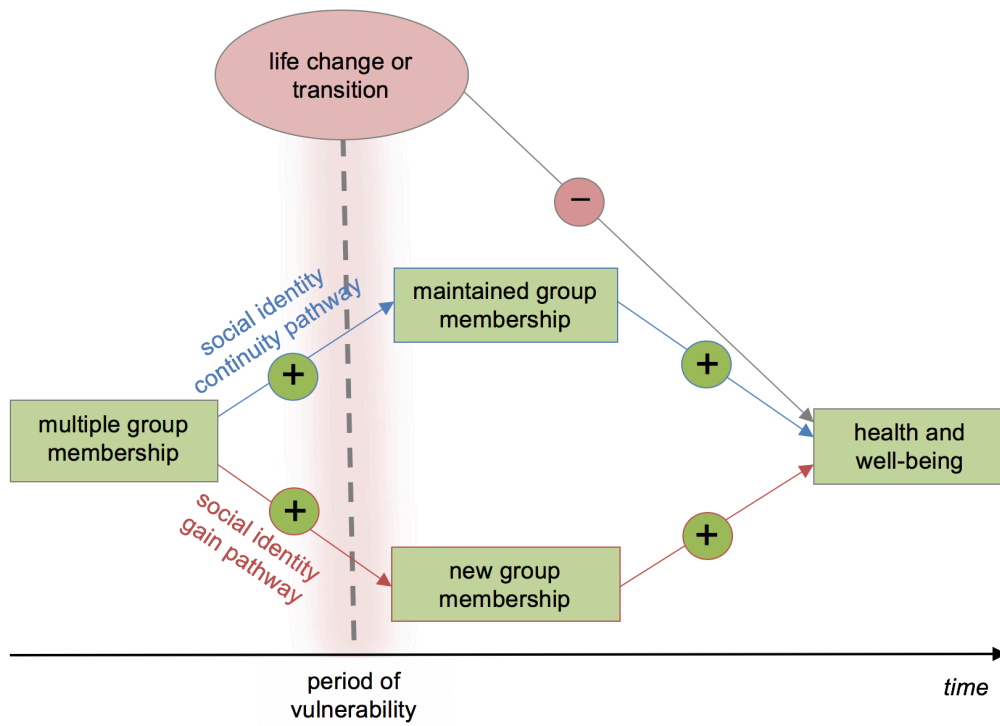
Figure 1: The Social Identity Model of Identity Change (SIMIC; Haslam et al., 2018)
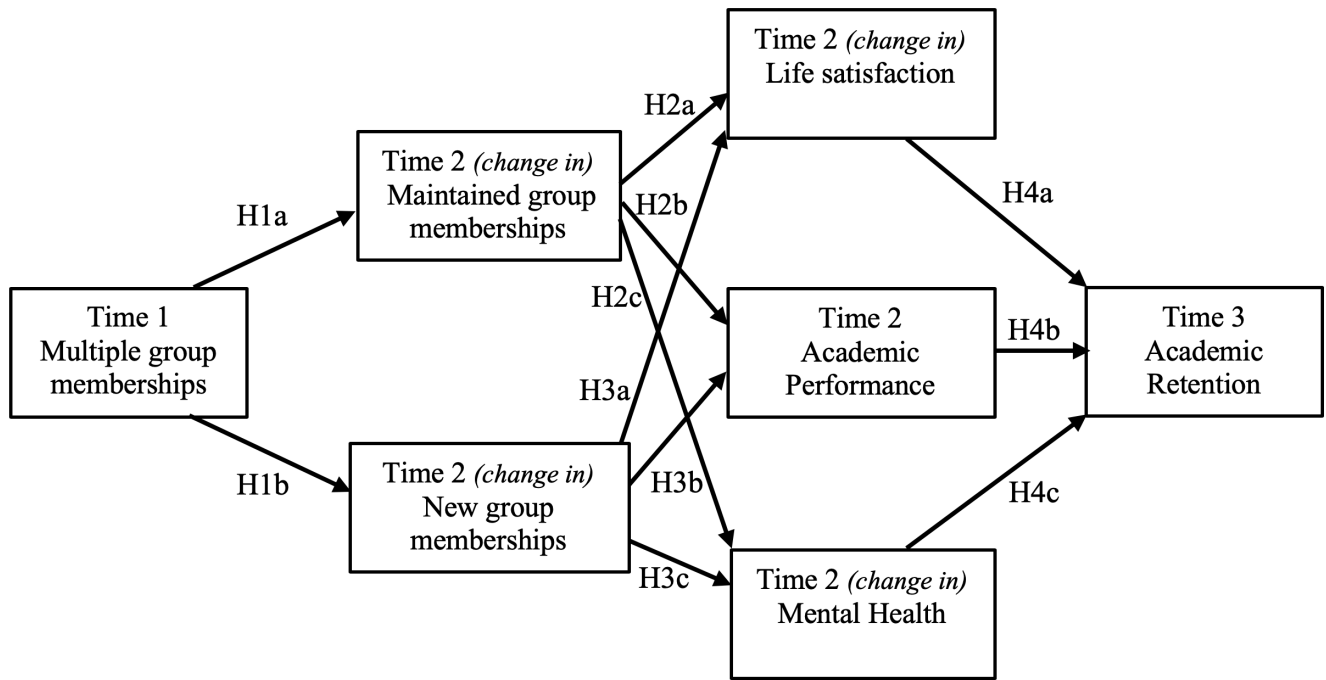
Figure 2. Hypotheses predicting international student adjustment based on the social identity model of identity change.

Note. Not pictured is H5, which predicted an indirect positive effect on academic retention at T3 of T2 maintained group memberships (H5a) and T2 new group memberships (H5b).
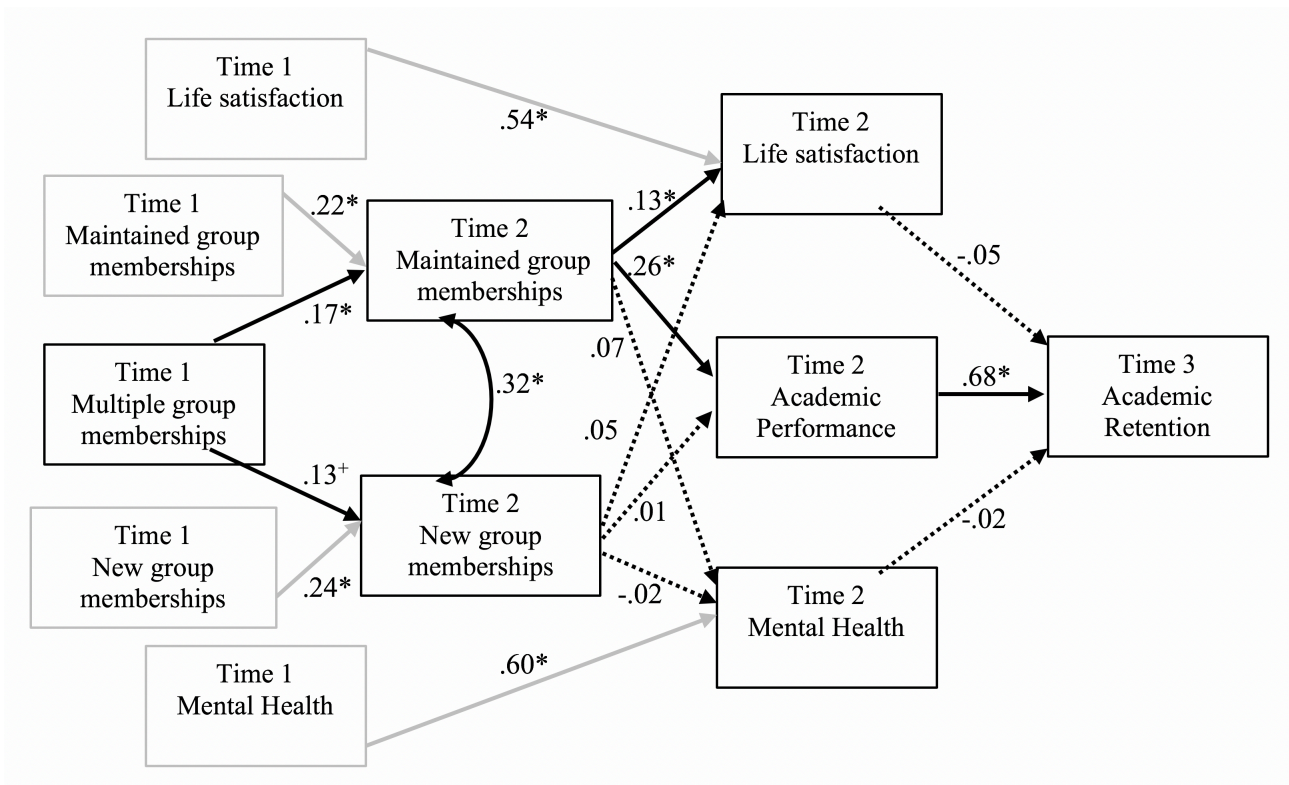
Figure 3. Model testing SIMIC's social identity pathways and their impact on academic performance, mental health and life satisfaction, leading to retention.

Notes:

$*p < .05;$ $^+ p < .06$

N = 210.

Grey variables and arrows indicate covariates, while dashed arrows indicate non-significant paths. All T1 variables were allowed to covary, and error terms were specified for all the endogenous variables.

Table 1. *Mean, standard deviation and bivariate correlations.*

	Mean	SD	Range	1	2	3	4	5	6	7	8	9	10
1. T1 Multiple group membership	4.43	1.38	1-4										
2. T1 New group membership	4.51	1.56	1-4	.35**									
3. T1 Maintained group membership	4.41	1.46	1-4	.41**	.32**								
4. T1 Mental Health	85.56	20.66	1-115	.09	.04	.03							
5. T1 Life Satisfaction	4.58	1.23	1-5	.17*	.11	.10	.22**						
6. T2 New group membership	4.48	1.34	1-4	.22**	.30**	.18**	.06	.08					
7. T2 Maintained group membership	4.53	1.37	1-4	.26**	.17*	.30**	.18*	.17*	.37**				
8. T2 Mental Health	85.66	23.55	1-115	-.02	-.08	.00	.61**	.13	.07	.18**			
9. T2 Life Satisfaction	4.41	1.26	1-5	.13	.11	.12	.26**	.56**	.14*	.23**	.19**		
10. T2 Academic Performance	5.15	1.24	1-7	.11	-.05	.06	.17*	.00	.08	.25**	.29**	.08	
11. T3 Academic Retention	-	-	0-1	.09	.06	.00	.13	.02	.09	.20**	.21**	.00	.69**

Table 2. *Model fit statistics demonstrating that the theoretical-derived model was a better fit for the data than four plausible alternative models.*

	χ^2 (*df*)	*p* value	RMSEA	SRMR	CFI	GFI	NFI
1. Theoretically-derived model	**46.40 (29)**	**.021**	**.05**	**.07**	**.96**	**.96**	**.91**
2. Strict chronological model	97.49 (36)	<.001	.09	.11	.87	.92	.82
3. Full cross-lagged model	57.20 (15)	<.001	.12	.07	.91	.95	.89
4. Inverted model	172.10 (29)	<.001	.15	.11	.70	.89	.68
5. Baseline group variables model	46.61 (20)	.001	.08	.09	.93	.95	.89

Note. Full details of the alternative models are provided in the Supplementary Appendix.

RMSEA = root mean square error of approximation

SRMR = standardised root mean square residual

CFI = comparative fit index

GFI = goodness of fit index

NFI= normed fit index.