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Demography (2024) 61(5):1309–1323
DOI 10.1215/00703370-11577556 © 2024 The Authors
Published online: 26 September 2024

Do Migrants Exhibit More Grit? A Research Note

Michael J. White, Tyler W. Myroniuk, Carren Ginsburg, and Chantel Pheiffer

ABSTRACT Strong expectations exist for the selectivity of migration along key demographic characteristics, such as age, sex, and education, which are often linked to social and economic drivers. Scholars acknowledge, however, that migratory behavior is also likely to be selective on characteristics that are less readily observable. This research note expands the list by examining "grit"—in other words, a measure of perseverance in the face of adversity. We test for a relationship between South African rural–urban migration, net of other standard covariates, and an established composite psychosocial measure of grit. We draw on two waves of survey data originating from a demographic surveillance platform but with respondents followed irrespective of their subsequent geographic mobility. Simple bivariate regressions suggest that grit is strongly associated with migration. Using multivariate models, we continue to detect a statistically significant association of migration with grit in the presence of controls. When the model is further refined to stratify by sex and separate geographic destinations, a sex differential emerges, with grit being more predictive for females. We conclude by suggesting that such findings should encourage broader inquiries that consider grit and other psychological characteristics, particularly investigations that might help further illuminate differentials by the experience of gender.

KEYWORDS Internal migration • Grit • Migration selection • Urbanization • South Africa

Introduction

A host of studies examining various aspects of differential migrant selectivity have followed Thomas's (1938) classic treatment of this topic in the *Research Memorandum on Migration Differentials*.[1] Such studies have ranged widely across geographic settings (world regions and development levels) and domains of selectivity (age, education, occupation, health), among other population characteristics (Angel et al. 2010; Anglewicz et al. 2018; Bernard and Bell 2018; Findley 1988; Kanbur and Rapoport 2005; Long 1973; Lu 2008; Norman et al. 2005; Rendall and Parker 2014; Rubalcava et al. 2008; Sandefur and Scott 1981; Tong and Piotrowski 2012). This migration

[1] Also, it is noteworthy that one of the Population Association of America's key awards is named for Dorothy Swaine Thomas, no doubt partly linked to her pathbreaking work on this topic and, more generally, on the relationship between demographic phenomena and their social and economic correlates.

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literature is rich with studies of characteristics that predict population redistribution, often resting on the primacy of economic motivations for migration (Harris and Todaro 1970; Massey et al. 1993; Stark and Bloom 1985; Stark and Taylor 1991). Much research interest on selectivity has centered on international migration, with a particular uptick in investigation of the healthy migrant hypothesis (Markides and Coreil 1986; Palloni and Arias 2004; Speciale and Regidor 2011; Urquia et al. 2012; Vang et al. 2017).

Individual measures of socioeconomic characteristics, such as education and employment, are readily available in most demographic datasets and are increasingly in longitudinal form for the study of migration (Beauchemin and Schoumaker 2016). Despite this expansion and deepening of knowledge, migrants are likely to have distinguishing characteristics that are less readily captured in conventional demographic surveys, such as being future-oriented, risk-takers, and strivers (Beauchemin and Schoumaker 2005; Bilsborrow et al. 1987; Lindstrom and Lauster 2001; Massey et al. 1993; Myroniuk et al. 2018; Taylor et al. 1996; White and Lindstrom 2005; Zelinsky 1971).

A growing literature examining the relationship between personality traits and migration in high-income countries sheds light on characteristics that seem to lead to differential migration outcomes. In several cases, the personality measurement within those studies draws on the Big Five personality traits (extraversion, agreeableness, conscientiousness, emotional stability, and openness, among other labels; Goldberg 1992), with derived indicator items incorporated into multipurpose surveys. Individuals identified as more extroverted and displaying more "openness" were found to be more likely to intend to migrate, engage in internal migration, and migrate more times throughout their lives (Bernard 2022; Campbell 2019; Crown et al. 2020). Openness was also associated with greater willingness (among university graduates) to migrate *internationally* to more "culturally distant" locations (Fouarge et al. 2019). Conversely, other Big Five traits have been found to be associated with lower chances of migrating—or are unrelated to migrating (Crown et al. 2020; Jokela 2009, 2021). In addition, recent evidence from British Household Panel data reveals that associations between migration and personality traits differ depending on the stage or features of the migration process, from expectation of a forthcoming move, to making the move, to the distance of the move (Shuttleworth et al. 2021). Reflecting consensus in this line of research, Shuttleworth et al. (2021:1) concluded that "personality should be more central in migration studies."

The present study complements and augments this valuable thread of research. First, our population of interest is from a low- and middle-income country (LMIC) viewpoint and from the more disadvantaged ranks within that setting. Indeed, migration from a LMIC—while undoubtedly motivated by personal and familial gain—may further entail decidedly different social and psychological challenges from those in high-income settings. Second, our personality measure invokes the "grit index," a measurable "noncognitive" psychological characteristic that indicates perseverance and resolve in the face of adversity (Duckworth et al. 2007; Duckworth and Quinn 2009; Eskreis-Winkler et al. 2014). There is mixed evidence about how closely linked personality traits and grittiness are (Christopoulou et al. 2018; Lin and Chang 2017; Rimfeld et al. 2016), suggesting that grit is an adjacent concept. The notion of grit

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was originally developed for the realm of educational achievement. It is rooted in the idea that individuals work "strenuously toward challenges, maintaining effort and interest over years despite failure, adversity, and plateaus in progress" (Duckworth et al. 2007:1087–1088).

Some research has suggested a link between migration and grit; for instance, school-age migrants have been found to exhibit more grit than native-born children (Tovar-García 2017). To be sure, the concept is in wide vernacular circulation, such as in portrayals of migrants undertaking risky journeys. Nevertheless, as a scientific concept among demographers, grit has been less systematically examined. To the best of our knowledge, there has been no direct empirical examination of Duckworth and colleagues' psychological measure of grit and its relationship to geographic mobility, in contrast to recent research investigations of other psychometric indicators.

Formally measuring grit and assessing whether it is associated with migration could offer deeper insight into migrant selectivity. Though the precise mechanisms—psychological and emotional—producing differences in behavioral outcomes attributable to grit are difficult to discern, grit itself could plausibly be a migration mechanism. An ideal test case would be among internal migrants in a setting where labor migration is common, even normative. Should such a relationship between grit and migration be found to exist, expanding similar research to other contexts and across borders would follow. We test for a relationship between the composite psychological measure of grit and migratory behavior, net of other standard covariates. Specifically, we examine whether this phenomenon extends to internal migration episodes, which are less extraordinary (but still risky and stressful) than international migration. We carry out our analysis in South Africa, a setting characterized by a LMIC transition economy that generates both conventional rural–urban migration and substantial temporary migration (Collinson 2010; Collinson et al. 2006; Hosegood et al. 2005; Posel and Casale 2003; Reed 2012). We draw our sample from a population resident in (or originating from) a district-size rural area, hence one with relative similarity in sociocultural circumstances. Furthermore, we employ origin village fixed effects to further adjust for any such local community variation. Our rural-origin population in South Africa offers a particularly informative setting, which also continues to manifest both the constraining legacy and subsequent reduced fetters of the apartheid and postapartheid eras.

Internal Migration in South Africa

In South Africa, as almost universally elsewhere, economic development has been accompanied by urbanization and associated rural–urban migration. In 1980, South Africa's population was 47% urban and grew to 63% urban in 2011 (Bank et al. 2020:13). Today the urban share of the population is estimated at 67% (Population Reference Bureau 2022). In addition, the country's migration patterns were characterized by distinctive spatial features. The apartheid-era simultaneous recruitment of labor and the prohibition of any permanent urban settlement for Black South Africans engendered a process of circular labor migration, that is, repeated moves between origin and (temporary) destination, which has persisted even in the postapartheid period (Wentzel and Tlabela 2006).

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Reed (2012), using longitudinal retrospective data, demonstrated the increasing prevalence of geographic mobility in South Africa, even prior to 1994 democratization, as some pass laws were gradually relaxed. Other longitudinal data from about 2010 to 2015 demonstrate the steady improvement, albeit modest, in socioeconomic circumstances that accompanied urban residence and rural–urban migration (Visagie and Turok 2020). These developments accord with widespread findings that migration and urbanization are associated with economic betterment at both the household and the societal levels (Henderson 2005; Spence et al. 2009; White and Lindstrom 2019; World Bank 2009).

From 2016 to 2021, Gauteng Province was the most attractive destination for internal migrants throughout South Africa, reflecting its economic dominance. Mpumalanga Province, the site of the present study's origin villages, saw 65% of its migrants residing in Gauteng at the end of this five-year period (Statistics South Africa 2021). The predominant migration stream of our study population—from the rural Agincourt district to metropolitan Gauteng and surroundings—is well-suited to shed light on geographic mobility and its selectivity.

Data and Methods

We draw on the Migrant Health Follow-Up Study (MHFUS), a contemporary prospective panel survey (Ginsburg et al. 2024). Data from Waves 1, 2, and 3 were collected in (approximately) 2018, 2019, and 2020. The study is nested in the Agincourt Health and Demographic Surveillance System (HDSS), an observation platform located in the Bushbuckridge district of Mpumalanga Province and situated about 500 kilometers northeast of Johannesburg. The population under surveillance includes long-term stable residents of the rural origin area, which is characterized by similar economic and environmental conditions, and those who reside outside the HDSS but remain attached to their origin household. This membership definition and accounting is a unique aspect of the Agincourt HDSS (Ginsburg et al. 2021; Kahn et al. 2012).

The MHFUS drew a simple random sample of persons aged 18–40 years from the Agincourt HDSS in 2017. MHFUS sample members were first interviewed in 2018 (Wave 1) and then followed onward irrespective of their degree of involvement with the original household; this effort contrasts with many health surveillance approaches in which migrants typically experience attrition from the study.

The survey enrolled 3,092 individuals into Wave 1, with a retention of 96% of participants through Wave 3 ($N = 2{,}967$). For the present analysis, we analyze data from Wave 2 (2019) and Wave 3 (2020), which were conducted by telephone and contain the grit module, which was introduced in Wave 2. Our analytic sample includes the 2,916 respondents for whom all components of the grit measure were available in Wave 2.

Measuring Migration—The Outcome

Migration is examined in two ways. First, it is studied as a dichotomous outcome that captures persons who moved out of the rural Agincourt HDSS area and resided elsewhere (deemed migrants) by Wave 2 (2020) versus did not move out. The second measure is polytomous and considers whether a migrant (1) moved to a location

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Table 1 MHFUS survey questions for Grit-S index by psychological domain

Consistency of Interest	Perseverance of Effort
(1) I often set a goal but later choose to pursue a different one.	(9) I finish whatever I begin.
(2) New ideas and projects sometimes distract me from previous ones.	(10) Setbacks don't discourage me.
(5) I have been obsessed with a certain idea or project for a short time but later lost interest.	(11) I am a hard worker.
(6) I have difficulty maintaining my focus on projects that take more than a few months to complete.	(12) I am diligent.

Notes: All items utilize a five-point response set, ranging from "very much like me" (=5) to "not like me at all" (=1). Original item numbers from Grit-O (12 items) are in parentheses. The maximum summation Grit-S score is 40.

outside of the HDSS but did not reside in Gauteng Province in 2020 or (2) moved to Gauteng Province in 2020 versus (3) did not move.

Measuring Grit and Other Covariates

We draw on the research of Duckworth and colleagues (Duckworth et al. 2007; Duckworth and Quinn 2009; Eskreis-Winkler et al. 2014) to measure this concept. We employ the eight-item measure Grit-S, which is "psychometrically stronger" than the original 12-item measure (Duckworth and Quinn 2009:168, 174). These items can be further broken down into two subdomains: (1) consistency of interest and (2) perseverance of effort. Grit-S was translated into Xitsonga, the primary language of the respondents, and incorporated into the Wave 2 MHFUS survey (see Table 1).

We use all eight questions from Grit-S, which are combined into a single index by making use of principal components factor analysis (using the *factor* command within the Stata 17.0 statistical package; Statacorp 2021). We do not present analyses by the subdomains but refer interested readers to the seminal works on this measure (Duckworth et al. 2007; Duckworth and Quinn 2009; Eskreis-Winkler et al. 2014). Hereafter, we refer to this outcome variable generally as the "grit index" or simply "grit." The issue of how stable these personality traits are over time (intrinsically and across measurements) has been raised (e.g., see Bernard 2022; Shuttleworth et al. 2021), with some even arguing for a strong genetic link (Furuya et al. 2023a, 2023b). However, we recognize that scientific scholarship is not settled on this matter and argue for the value of pursuing an empirical understanding of grit.

We include the following covariates in our models: sex (female = 0, male = 1), age (continuous), education (completing secondary school[2] = 1 vs. not = 0), and prior migration status based on MHFUS Wave 1. We also construct and include a measure

[2] Completion of secondary school is indicated by passing an exam, generally referred to informally as "matric." Our survey asks respondents whether they have completed "matric."

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of "total health conditions," which is the summation of respondents' self-reported chronic illness diagnoses in Wave 2. (The survey asks the respondent about the presence (yes/no) of any of nine specific health conditions: high blood pressure, diabetes, high cholesterol, HIV, TB, asthma, COPD, depression, and stroke. Most young adults are healthy and report no conditions; only about 10% report one or more conditions, with HIV being the most commonly reported chronic condition.) Lastly, we include village fixed effects to account for any local characteristics across the 31 origin villages that may push or retain prospective migrants.

Modeling

To examine the relationship between grit and migration, we estimate binary logit and multinomial logit regression models predicting the dichotomous and polytomous measures of migration. We also stratify selected regressions by sex, given the long-known different choices and calculations that men and women face in the decision to migrate. The single factor stemming from the grit index is the main predictor in each model, while sex (in pooled models), age, education, prior migration, total health conditions, and village fixed effects are included as controls. We apply postsurvey weights, although these results are very similar to unweighted results given the original simple random sampling design. Additional models with subfactors of Grit-S instead of a single factor (not shown) produce few substantive differences.

Results

Descriptive Statistics

Table 2 presents descriptive statistics for our sample. In Wave 3, slightly more than half (52%) of MHFUS respondents were migrants beyond the rural-origin Agincourt HDSS, with 22% of migrants having moved to Gauteng Province and the other 30% having moved to other locations outside of the Agincourt origin ("elsewhere"). From the questions in the eight-item Grit-S index for Wave 2 responses, we extracted the first factor (principal component), which explained 57.2% of the common variance. When examining the original eight items, we find that responses tend to be clustered at the more determined and optimistic end (greater grit) of the scale. The sample is split evenly by sex; the average age is 30.6 years, and 63% had completed secondary school. Lastly, 43% of participants were prior migrants, that is, resided outside Agincourt in Wave 1, with males (49%) more likely than females (36%) to have undertaken the earlier move. There was no appreciable difference (not shown) in the fractions of male and female migrants residing in Gauteng Province.

Regression Results

Table 3 shows weighted regressions (pooled over sex) predicting the log odds of migration by Wave 3. Models are cumulative with respect to covariates. Model 1 is a

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Table 2 MHFUS sample descriptive statistics, weighted

Outcome Variable	Mean/ Proportion	SD
Binary: Migrant Beyond Agincourt—Wave 3		
Nonmigrant	.48	
Migrant	.52	
Polytomy: Migrant Beyond Agincourt—Wave 3		
Nonmigrant	.48	
Migrant elsewhere	.30	
Gauteng migrant	.22	
Predictor Variable		
Grit factor index	.00	1.00
Grit-S summative score (out of 40 maximum)	34.98	4.98
Control Variables		
Male	.50	
Age at interview	30.60	5.75
Passed matric (secondary education complete)	.63	
Total health conditions	.11	.33
Migrant in Wave 1	.52	

Note: N=2,916.

Table 3 Binary logit: Migration beyond Agincourt origin

Outcome Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Grit Index	0.261***	0.250***	0.202***	0.105*	0.114*
	(6.83)	(6.45)	(5.06)	(2.27)	(2.45)
Male		0.617***	0.568***	0.449***	0.463***
		(8.13)	(7.16)	(4.72)	(4.80)
Age at Interview		0.014*	0.030***	0.007	0.008
		(2.12)	(4.29)	(0.88)	(0.95)
Passed Matric (secondary education complete)			0.837***	0.586***	0.598***
			(10.14)	(6.00)	(6.04)
Total Health Conditions			–0.617***	–0.467**	–0.455**
			(–4.58)	(–3.12)	(–2.98)
Migrant in Wave 1				2.674***	2.692***
				(26.46)	(26.03)
Constant	0.068	–0.668**	–1.598***	–1.735***	–1.663***
	(1.80)	(–3.18)	(–6.86)	(–6.32)	(–5.15)
Number of Observations	2,916	2,916	2,916	2,916	2,916
Pseudo R^2	.012	.030	.066	.290	.296
AIC	3,994.0	3,923.7	3,784.5	2,880.3	2,915.5
BIC	4,006.0	3,947.6	3,820.4	2,922.1	3,136.7

Notes: t statistics are shown in parentheses. The outcome reference category is nonmigrant. Age at interview, passed matric, and total health conditions are measured at Wave 2; 30 village dummy variables are omitted from the table for fixed effects in Model 5. All models are weighted; pseudo R^2, AIC, and BIC are from the associated unweighted model. AIC = Akaike information criterion. BIC = Bayesian information criterion.

*p<.05; **p<.01; ***p<.001

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Table 4 Binary logit: Migration beyond Agincourt origin by sex

Outcome Variable	Male	Female	Male + Fixed Effects	Female + Fixed Effects
Grit Index	0.036	0.170**	0.029	0.174**
	(0.55)	(2.64)	(0.42)	(2.69)
Age at Interview	0.008	0.004	0.009	0.006
	(0.64)	(0.35)	(0.77)	(0.49)
Passed Matric				
(secondary education complete)	0.788***	0.369**	0.799***	0.401**
	(5.78)	(2.64)	(5.68)	(2.73)
Total Health Conditions	–0.202	–0.563**	–0.214	–0.538**
	(–0.73)	(–3.17)	(–0.66)	(–2.92)
Migrant in Wave 1	2.732***	2.640***	2.778***	2.698***
	(18.38)	(18.86)	(18.41)	(18.40)
Constant	–1.445***	–1.471***	–1.605***	–1.222**
	(–3.88)	(–3.73)	(–3.52)	(–2.62)
Number of Observations	1,464	1,452	1,464	1,452
Pseudo R^2	.290	.266	.301	0.282
AIC	1,411.1	1,472.3	1,449.6	1,501.0
BIC	1,442.9	1,504.0	1,640.0	1,691.1

Notes: t statistics are shown in parentheses. The outcome reference category is nonmigrant. Age at interview, passed matric, and total health conditions are measured at Wave 2; 30 village dummy variables are omitted from the table for fixed effects in Model 5. All models are weighted; pseudo R^2, AIC, and BIC are from the associated unweighted model. AIC = Akaike information criterion. BIC = Bayesian information criterion.

**$p < .01$; ***$p < .001$

bivariate test of whether grit has any association with migration. Models 2 through 4 add individual controls, while Model 5 accounts for origin village fixed effects (not shown individually). In each model, grit is positively associated with the odds of migration ($p < .001$ in Models 1–3; $p < .05$ in Models 4 and 5), although the magnitude of the grit coefficient does decrease with the inclusion of more controls. In Model 5, one additional point on the grit factor (1 standard deviation) predicts a roughly 12% [exp(0.114) = 1.12] increase in the odds of being a migrant in Wave 3. The inclusion of prior migration status adds the most explanatory power across models and diminishes the magnitude of grit the most; those living outside the origin rural area two years prior were much more likely still to be migrants in Wave 3 (2020) ($p < .001$ in Model 4). We acknowledge that these Wave 1 migrants may have moved into that status at least in part owing to greater levels of grit at an earlier point in their life. As expected, men are more likely to migrate ($p < .001$ in Models 2–5), and those with more chronic conditions are less likely to migrate ($p < .001$ in Model 3; $p < .01$ in Models 4 and 5). Origin village fixed effects add little explanatory power beyond the covariates found in Model 4.

Table 4 shows results from regressions stratified by sex. The first set of models (Models 1 and 2) includes only personal covariates, while the second set of models (Models 3 and 4) introduces village fixed effects for males and females separately. Notably, the grit factor is not strongly predictive for males in this gender-stratified model, while it is statistically significant ($p < .01$) for females. A one-unit increase

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Table 5 Multinomial logit: Migration to Gauteng versus elsewhere by sex

	Male		Female	
Outcome Variable	Migrant Elsewhere	Gauteng Migrant	Migrant Elsewhere	Gauteng Migrant
Grit Index	0.014	0.074	0.178*	0.155
	(0.20)	(0.84)	(2.56)	(1.64)
Age at Interview	0.011	0.004	0.005	0.007
	(0.89)	(0.24)	(0.37)	(0.38)
Passed Matric (secondary education complete)	0.612***	1.182***	0.316*	0.595**
	(4.15)	(6.52)	(2.01)	(2.81)
Total Health Conditions	–0.097	–0.479	–0.464*	–0.725**
	(–0.32)	(–1.30)	(–2.33)	(–2.70)
Migrant in Wave 1	2.483***	3.293***	2.260***	3.534***
	(15.14)	(16.82)	(14.21)	(16.65)
Constant	–2.060***	–2.750***	–1.644**	–2.476***
	(–4.19)	(–5.01)	(–3.26)	(–3.74)
Number of Observations	1,464		1,452	
Pseudo R^2	.232		.242	
AIC	2,583.5		2,305.1	
BIC	2,964.3		2,685.3	

Notes: t statistics are shown in parentheses. The outcome reference category is nonmigrant. Age at interview, passed matric, and total health conditions are measured at Wave 2; 30 village dummy variables are omitted from the table for fixed effects models. All models are weighted; pseudo R^2, AIC, and BIC are from the associated unweighted model. AIC = Akaike information criterion. BIC = Bayesian information criterion.

*$p < .05$; **$p < .01$; ***$p < .001$

on the grit scale predicts 18% greater odds of migration among women.[3] In other features of these models, the predictive effect of prior migration in Wave 1 is about equally strong for males and females, and the magnitude of the coefficient on secondary school completion is about twice as large for males as for females. Chronic illness is inversely associated with migration among females, but it is not significant among males. Introducing the fixed effects for origin village changes these results only modestly.

Table 5 further refines these analyses by separating the outcome by migrant destination. We estimate a multinomial logit model for the outcomes of (1) migration to Gauteng Province versus (2) migration elsewhere versus (3) not migrating as the referent. For males, we observe that greater education (passing matric) and prior migration are strongly predictive of both Gauteng residence (vs. migration elsewhere) in Wave 3. Age and health conditions have no predictive power. Males with a one-unit-higher value on grit are about 8% more likely to be a Gauteng migrant, but not significantly so.

For females, the pattern is somewhat different. The presence of health conditions appreciably reduces the odds of being a migrant to Gauteng or elsewhere, and higher

[3] Pseudo-R^2 in the companion unweighted model is slightly larger in each case, and the coefficient on the grit factor is larger for females.

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values on the grit factor predict greater likelihood of migration to *both* Gauteng Province ($p = .101$) and elsewhere ($p = .011$).

The multinomial logit results also show that prior migration experience (migrant in Wave 1) predicts greater likelihood of residing in Gauteng Province (by Wave 3) than other locations beyond the origin community among both males and females. This result is consistent with migrants gaining experience beyond the origin rural community to subsequently tackle onward migration to larger and possibly more daunting locations.

Alternative Specifications

We examined several alternative models, including alternative covariates and subanalyses of outcomes. For the most part, these models do not redirect the findings we present here, but in a few cases we observe some differences. We examined more flexibility with respect to age (given that our basic results generate no appreciable age gradient). We augmented models with a quadratic term in age and a four-category discrete measure of age groups. In a subgroup estimation limited to a much smaller subsample of "new migrants" (i.e., individuals residing in the origin community in Wave 2 and outside in Wave 3), we observe that the youngest (18–29 years) of the four discretized age groups was more likely to migrate, although a quadratic specification did not add to explained variation. Moreover, we observe that the sensitivity of migration to age may depend somewhat on the stage in the process of considering and then enacting relocation (Campbell 2019).

To answer the question of whether individuals with more grit experienced more migration events (cumulatively), we examined the total number of new residences taken as a function of our same covariates. Individuals with higher values of the grit index are likely to have resided in more locations (in an ordinary least-squares model, $b = 0.0412$; $p = .009$), and this result is stronger for females ($b = 0.0419$; $p = .036$) than males ($b = 0.0406$; $p = .104$). This cumulative retrospective measure may include moves that took place well prior to our study onset; by contrast, we confined our central approach to covariates measured within the fieldwork interval. In a further subanalysis, we limited the analytic sample to individuals residing in the origin community in Wave 2 ($N = 1{,}391$), with the outcome indicator being those who were residing outside of the origin in Wave 3. Such new migration events are infrequent in this subsample (6.4%), and the grit index is not significant. Among personal characteristics, only age and sex significantly predict (negatively) the probability of undertaking a new migration in this weakly powered model. An age–education interaction term added little information beyond the measurable first-order effects of these two variables.

Discussion and Conclusion

Simple binary logit regressions suggest that grit is associated strongly with migration: we observe about a 30% higher odds of moving out of the rural origin for a unit higher value on the standardized grit index. Even in the presence of controls, pooled

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models (over sex) reveal a discernible predictive ability for grit. The fact that grit still improves the prediction of Wave 3 migration status, beyond the impact of conventional migration covariates, is noteworthy.

When the model is refined fully to stratify by sex and separate destinations, the picture and interpretation change somewhat. We find that grit remains more predictive for females. Weaker effects of education (passed matric) and stronger negative effects of health conditions are also seen for females. This sex differential supports conclusions from prior anthropological and sociological research regarding a gendered context of migration. Ethnographic works have depicted the often brutal rigors female migrants undergo and then must endure upon arrival at their destinations (Boccagni 2012; Hondagneu-Sotelo 2007). Social and structural barriers to migration are arguably greater for women than for men, especially in the South African setting (Bozzoli and Nkotsoe 1991; Vearey et al. 2017). Female migrants must often, for example, balance caregiving and work. Moving away from rural homes, where women have extended family support systems and, often, young children, may come with large costs to emotional well-being and quality of life. In addition, urban destinations in which migrants arrive are often characterized by high levels of informality and precarity. It is possible, therefore, that migration, while normative for men in this context, is more exceptional for women—so that female migrants are more selective along characteristics such as grit in order to both undertake and persevere in migration (Hall and Posel 2019, 2020). Future research might look more deeply into this aspect of differentials by gender. Equally of value, future work could examine in some detail the relationship between family structural dynamics (partnership, childbearing, coresidence, and fostering) that may be particularly pertinent (but require more detailed family and household histories) in a LMIC setting.

Prior demographic research on migration and personality (Bernard 2022; Campbell 2019; Crown et al. 2020; Fouarge et al. 2019; Jokela 2009, 2021; Laible and Brenzel 2022; Shuttleworth et al. 2021) has been effective in uncovering migration mechanisms that have long remained elusive. While much remains to be learned about the nature, stability, and possible dimensionality of such noncognitive characteristics, we argue that grit and its parallel measures tap a noncognitive trait that affects motivation, assessment of risk, and perseverance. Such multidisciplinary demographic research is worth pursuing to provide greater insight into migrant selectivity and motivations.

This research note builds on existing South African migration work by making explicit what scholars have implied to be a key characteristic of migrants—the presence of grit. This work also extends the body of migrant selectivity research more generally. We examined rural-origin *internal* migration, a common occurrence worldwide in LMICs. We found substantive associations between having more grit and migrating. Including measures of grit in longitudinal migration surveys would help determine this additional aspect of migrant selectivity to identify whether there is a difference in health or socioeconomic outcomes for migrants. Moreover, such research extensions could help illuminate whether grit emerges more clearly in certain types of migration episodes or contexts and provide insight as to how early selectivity translates into long-term migrant–nonmigrant differentials in health, economic, and social circumstances. ■

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Acknowledgments Principal funding for this research was provided by the Population Dynamics Branch of the Eunice Kennedy Shriver National Institute of Child Health and Human Development via National Institutes of Health (NIH) grant 1R01HD083374, "Migration, Urbanization and Health in a Transition Setting," with additional institutional support to Brown University's Population Studies and Training Center from NIH P2CHD041020. The MRC/Wits Rural Public Health and Health Transitions Research Unit (Agincourt) acknowledges funding from The Wellcome Trust, UK (grants 058893/Z/99/A, 069683/Z/02/Z, 085477/Z/08/Z, 085477/B/08/Z); the Medical Research Council, South Africa; and the South African Department of Science and Innovation through the South African Population Research Infrastructure Network hosted by the South African Medical Research Council. We thank H. Xia (Population Studies and Training Center) and D. Ohene-Kwofie and N. Mathumbu (MRC/Wits Agincourt data unit) for data management assistance. We thank the study participants and field team, led by S. Harawa, for their valued contributions to the study. We also thank several anonymous reviewers for helpful comments.

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