



The Hidden Structure of Support: The Role of Vertical Bonding Ties for Refugees

Hwajin Shin¹ · Louise Ryan²

Received: 20 October 2025 / Accepted: 1 May 2026
© The Author(s) 2026

Abstract

Research emphasises the benefits and limitations of in-group bonding ties for migrants, yet it typically overlooks the hierarchical variations within such ties. Drawing on social network data gathered by Shin (2022) from North Korean refugees in London and the foundational conceptualisation of horizontal and vertical ties developed by Ryan (2016), this study responds to calls for closer attention to differences of status, hierarchy, and resource distribution within migrant and refugee networks. Using quantitative and qualitative network analysis, we examine how North Korean refugees differentiate in-group members based on perceived status, identifying the individual and relational factors associated with higher-status recognition. The observed hierarchical structure reveals significant internal diversity within an ostensibly homogeneous ethnic group and shows that vertical and horizontal ties offer a powerful lens for analysing the structure and meaning of relationships within migrant networks. Rather than assuming resources flow freely within co-ethnic networks, this paper advances understanding of what motivates higher-status individuals to share, or refuse to share, valuable resources with co-ethnics and fellow refugees.

Keywords Vertical bonding ties · Horizontal bonding ties · Co-ethnic networks · Perceived status · Refugees · Social networks

✉ Louise Ryan
l.ryan@londonmet.ac.uk
Hwajin Shin
hjshin@hkbu.edu.hk

¹ Department of Sociology, Hong Kong Baptist University, Hong Kong, China

² Global Diversities and Inequalities Research Centre, London Metropolitan University, London, UK

Introduction

Being part of a dense ethnic network generates benefits, mitigating the disadvantages migrants face in the destination society (Nannestad et al., 2008; Portes, 1998). At the same time, research cautions that dependence on co-ethnic networks can confine migrants to limited information and opportunities, restricting upward mobility once initial post-migration needs are met (Kracke & Klug, 2021; Lancee, 2012). This tension has been interpreted as the need for migrants to move away from bonding ties with similar others and toward bridging ties that connect migrants to inter-group contacts in different social or ethnic positions (Granovetter, 1973).

Yet this emphasis on inter-group bridging rests on a prevailing tendency to overlook the subtleties within intra-group relationships and to treat co-ethnic ties as largely homogenous in character and function (Anthias, 2007; Patulny & Svendsen, 2007; Shin, 2022). Migrant networks, particularly those of marginalised communities, are routinely depicted as non-hierarchical and detached from prevailing notions of stratification (Robertson, 2019; Vacca et al., 2022). Ethnic homogeneity, however, does not imply socioeconomic homogeneity, and meaningful differences in power and resources exist within co-ethnic populations (Ryan, 2011). Even modest status differences can prove consequential, shaping who benefits from collective solidarity and who remains peripheral to the network's resource flow.

This study advances understanding of migrant networks by examining hierarchical relationships based on individuals' perceptions of in-group members as possessing merit, influence, or resources (Ryan, 2016). Drawing on Ryan's (2011, 2023) conceptual distinction between *horizontal* and *vertical bonding ties* and a rich empirical dataset developed by Shin (2022, 2025), we disentangle how migrants differentiate between horizontal and vertical in-group ties within their ethnic group and the factors motivating these perceptions. Rather than suggesting upward bridging must occur across ethnic boundaries, the findings show that status-spanning ties may also unfold within co-ethnic networks. Attention to internal variations underscores a potential that co-ethnic bonding (horizontal ties) and bridging (vertical ties) can remain a vital source of social capital beyond the earliest phases of settlement, particularly for vulnerable and stigmatised migrant and refugee groups.

Network data from North Korean refugees in London provides the empirical foundation for the analysis. Reportedly, the UK has, since 2004, hosted the largest number of North Koreans outside the Korean peninsula, forming a small but dense community of first-generation refugees (Song & Bell, 2019). Their clustering within a single neighbourhood facilitates intra-group contact, while their long residence, averaging ten years at the time of data collection in 2019, allows examination of relationships beyond the earliest phases of settlement. Their shared migration history further reduces unobserved variation and provides a rare opportunity to examine differences in relative status. Despite their apparent

homogeneity, peer, or horizontal, and hierarchical, or vertical, connections reveal meaningful in-group differentiation and varying access to resources. Thus, our study provides the fine-grained distinctions that structure ties within migrant groups and contributes to growing calls for closer attention to differences of status, hierarchies, and resource distribution (see Bygnes, 2021).

Using both quantitative and qualitative social network methods, the study advances migration studies through three contributions. First, it draws on network methods to chart the internal status hierarchy of a refugee group with unusual precision, mapping how deference is distributed and concentrated within a hard-to-reach population. Second, it demonstrates empirically that bonding ties within a co-ethnic group are not uniformly horizontal but span meaningful status gradients with specific individual and relational factors shaping who gets recognised as a vertical contact. Third, the analysis identifies two high-status practices with divergent consequences: *open brokerage*, where higher-status individuals actively channel resources toward less-advantaged co-ethnics, and *selective gatekeeping*, where status is preserved through social closure. Together, these findings sharpen understanding of the stratification underlying migrant networks and illuminate when implicit status differences drive or limit the utility of in-group bonding ties.

Literature Review

The Formation of Ethnic Ties

A recurring theme in migration literature is that homophily drives tie formation among migrants, with ethnicity consistently emerging as the strongest basis for building trust and forming social ties (Bilecen & Cardona, 2018; Chuatico & Haan, 2022; Leszczensky & Pink, 2019; Wimmer & Lewis, 2010; Windzio & Bicer, 2013). Bounded by a shared sense of destiny and identity, support networks centred on kinship and co-ethnic ties facilitate migration, early settlement following arrival, and ongoing resource exchanges (Boyd, 1989). Particularly among marginalised migrants, the willingness to offer help is portrayed as being amplified in the destination (Portes & Sensenbrenner, 1993; Tilly, 2005). Empirical evidence links such solidarity to improved employment outcomes, higher earnings, and ethnic entrepreneurship that propagates economic integration (Aguilera & Massey, 2003; Alba & Nee, 2003; Anthias & Cederberg, 2009; Portes & Rumbaut, 2006; Waldinger, 1996). These networks also yield important psychological benefits, enhancing migrants' sense of belonging, self-efficacy, and life satisfaction (Correa-Velez et al., 2020; Kornienko et al., 2018; Shin, 2022).

At the same time, research argues that an exclusive dependence on co-ethnic ties constrains socioeconomic mobility. Dense intra-group networks tend to reinforce marginalisation and confine migrants to limited segments of the labour market (Kracke & Klug, 2021; Lancee, 2012; Putnam, 2000; Sanders et al., 2002;

Verhaeghe et al., 2015). Under conditions of insecurity, such relationships may also expose migrants to economic exploitation (Del Real, 2019). In response to these constraints, research highlights the value of weak, bridging ties that connect migrants to individuals outside their ethnic group, expanding access to diverse information, opportunities, and support (Granovetter, 1973; Putnam, 2000).

Nevertheless, the benefits of bridging should not obscure the continued value of bonding ties. The effectiveness of co-ethnic networks varies with the degree of internal diversity and resource distribution (Eve, 2014; Ryan, 2016; Ryan et al., 2008; Shin & Yoon, 2023; Vacca et al., 2022). Studies show that low-status immigrants and refugees with limited access to meaningful bridging relationships benefit from bonding co-ethnic ties (Kalter & Kogan, 2014; Shin, 2025; Wegener, 1991). Ultimately, the value of a network depends less on to whom a migrant is connected and more on the resources that flow through those relationships (Lin, 1999, 2001). When trust and emotional closeness underpin relationships, resources circulate more easily and with mutual commitment (Patulny & Svendsen, 2007). Under such conditions, strong bonding ties that come with higher motivation to assist and greater “bandwidth”—or larger capacity to transfer resources—may generate more dependable forms of support than weak bridging ties (Aral & Van Alstyne, 2011; Kim & Fernandez, 2017; Shin, 2022).

Ryan’s work with different migrant groups over several decades (Ryan et al., 2008; Ryan, 2023) challenges simple binaries of bonding (co-ethnic ties) versus bridging (non-co-ethnic ties). Instead, she argues for the importance of analysing the relationships, flow of resources, and the relative social location of actors within migrant networks. Ryan (2011) suggests that whether co-ethnic bonding ties reinforce isolation and stagnation or provide vital support partly depends on implicit status differentiation within these networks. In this view, co-ethnic ties differ by the social distance they span, with horizontal ties linking peers of similar socioeconomic standing and vertical ties connecting individuals who occupy different positions within the hierarchy. Building on this framework and on the unique dataset developed by Shin (2022), this study explores the conditions associated with advantages or disadvantages of in-group bonding among North Korean refugees in London. Instead of assuming altruistic motivations and guaranteed social support within these ties, the study generates new insights into how status perceptions and resource availability may influence the benefits of in-group bonding relationships for vulnerable migrant populations.

Status Within the Ethnic Community

Status is, broadly, a person’s position in a social hierarchy, determined by the accumulated expressions of deference (Goode, 1978). Within any given group, status hierarchy emerges through a web of deference relations (Gould, 2002; Sauder et al., 2012). A crucial feature of status is that it cannot be self-declared or seized but must be awarded by others through their expressions of deference and recognition (Sauder et al., 2012).

Status, deference, and social networks are thus closely intertwined (Blau, 1964; Parsons, 1963). Deference flows through social ties, making status grounded in a shared perception of an individual's merit and esteem (Thomas & Mark, 2013; Snijders et al., 2013). Although the criteria for recognition vary across contexts, they generally rest on possessing valued attributes or providing services and resources that others regard as desirable (Gould, 2002). Status advantage, then, results not only from individual merit but also from the social recognition of those qualities. Through both direct and indirect relational ties, where observers note the provision of valued services and resources, status becomes a collective judgement embedded in social networks (Fu et al., 2018).

Social resource theory further corroborates the benefits of higher-status contacts, suggesting that resources obtained through social ties are vital for status attainment, with hierarchical relationships yielding greater returns than peer relationships (Lin, 2001). According to Granovetter (1985), weak ties are valuable to the extent that they bridge actors positioned in different social locations and bring in new opportunities. Similarly, Bourdieu (1986) acknowledges that social ties are most beneficial when they facilitate access to individuals who possess greater resources and knowledge. Research consistently confirms that upward ties in the social hierarchy bring valuable, otherwise unknown information and opportunities, facilitating socioeconomic advancement and instrumental gains (Barbulescu, 2015; Fu et al., 2018; Lin, 1999).

However, there is a tendency to oversimplify migrant relationships by overlooking instances where co-ethnic connections may function like bridging ties—namely, when a meaningful status gap is present and lower-status individuals gain access to co-ethnics whose attributes or resources confer tangible advantages. In much of the literature, inter-group contacts are labelled as “weak upward” ties that bridge social distances, while intra-group ties are treated as uniformly horizontal and deemed as effectively truncating migrant groups from upward mobility. This binary approach to migrant networks has set up a biased dichotomy between the types of social ties (Patulny & Svendsen, 2007), calling for the creation of upward social connections with natives or inter-group individuals for achieving instrumental outcomes.

In practice, bonding ties need not be purely horizontal or status-levelling, with actors' relative social positions determining the value of social ties (Ryan, 2011, 2016). Building on these insights, this paper presents a new understanding of the diversity of bonding ties by probing how migrants construct and maintain intra-group contacts in varied social locations. To achieve this, it considers status as relational, derived, and defined through social interactions (Blau, 1977). Rather than viewing an individual's position as determined solely by personal attributes, this paper acknowledges that status emerges through ongoing social exchanges, shaped by how others perceive and validate a person's prestige, authority, or influence. Through multifaceted network analysis of vertical in-group ties, we identify the circumstances under which navigating within-group social hierarchies may prove beneficial for migrants and refugees in vulnerable conditions.

Data and Methods

Data

The study employs a mixed methods design, drawing on data collected from North Korean refugees living in Greater London. The data collection consisted of two phases: first, a structured survey administered face-to-face; second, in-depth interviews with a select subset of participants. All data collection was conducted in Korean by the first author (Shin, 2022, 2025). At the time of data collection, approximately 700 North Korean refugees and asylum seekers lived in the UK, of which fewer than 300 were adults over the age of 18. Because these refugees, like most, are a hard-to-reach population, strategies from respondent-driven sampling (RDS) were implemented to recruit study participants (see Heckathorn, 1997, 2002, 2007; Tyldum & Johnston, 2014 for review). RDS is well-suited to hidden, stigmatised populations with unknown sampling frames and dense social ties. Its chain referral design protects anonymity, encourages participation, and yields a larger, more diverse sample with reduced inference bias.

In the first stage of data collection, conducted between January and March 2019, a total of 139 North Korean refugees completed a survey lasting approximately 1.5 to 2 h. The instrument comprised standardised items on sociodemographic characteristics and settlement experiences along with an egocentric network section. Beyond basic demographics, the first section focused on integration in the destination context through measures of health, language proficiency, and global assessments of social relationships. A constrained egocentric network approach was then used to generate a detailed map of personal networks by systematically identifying local social ties (Fischer, 2009; Mouw et al., 2014).

To ensure the name elicitation task remained manageable, the nomination of up to 31 contacts was organised into specific relational categories. These included five household kin, five non-household kin, 14 intra-group friends or acquaintances, and seven inter-group contacts. A structured name elicitation format was adopted after pilot testing revealed that open freelistings caused significant discomfort, evoking distressing associations with North Korean surveillance practices. Predefined relational categories were then introduced to minimise psychological burden while accommodating varied network compositions. In practice, most respondents did not approach the maximum limits. Participants nominated an average of 15.20 total contacts ($SD=6.17$; range 4–27), comprising 2.43 family ties ($SD=1.95$), 8.24 non-kin in-group contacts ($SD=4.19$), and 4.53 non-kin out-group contacts ($SD=2.24$). These distributions confirm that the predefined slots functioned as ceilings, not targets, successfully capturing meaningful network variation without imposing undue respondent burden.

Once names were generated, respondents reported demographic characteristics and tie attributes for each contact. All data regarding trust and support availability were based on participants' subjective perceptions. For the primary variable of interest, perceived status, respondents indicated whether each contact occupied a lower, equal, or higher social standing relative to themselves and their families. Finally, the

last five digits of phone numbers were recorded to identify overlaps in nominations across the sample.

Following a nested mixed method research design (Small, 2011), the second phase consisted of in-depth semi-structured interviews conducted with a subset of 33 participants (15 men, 18 women) between March and May 2019. From the pool of survey respondents who consented to voluntary follow-up participation, interviewees were purposively selected to include diverse in-group network profiles, ranging from highly engaged to ambivalent and peripheral patterns of in-group interactions, while maintaining variation in key demographics such as age, gender, and socioeconomic status. Interviews were conducted until data saturation was achieved. Each interview lasted between 1.5 and 6 h, averaging approximately 2 h.

Distinct from the standardised survey, the interviews were designed to provide interpretive depth to the observed personal network patterns. While the survey mapped the presence of relational ties, the interviews produced narrative accounts to clarify how respondents understood, evaluated, and navigated these relationships. Specifically, the qualitative protocols covered everyday adaptation in the UK, the formation and maintenance of in-group ties, concrete episodes of giving and receiving support, and the practical negotiation of reciprocity and boundary-setting. Study procedures followed approval from the relevant Institutional Review Board (KUIRB-2019-0012-01). All participants provided voluntary informed consent before data collection. To further protect this highly vulnerable population, all names are pseudonyms and identifying details were minimised to ensure anonymity.

Analysis

The analysis combines three complementary approaches drawing on nested datasets at both the individual (ego) and tie (alter) levels. The baseline sample comprised 139 surveyed respondents and was restricted to 136 egos for the quantitative analyses by excluding three 1.5-generation respondents, who arrived as children and reported limited recollection of life in North Korea or migration experiences. First, to assess how individual and tie attributes predict the likelihood of perceiving an in-group member as higher in status, we estimate multilevel models using 1313 intra-group nominations or alter ties provided by the 136 respondents. Second, to examine how individual perceptions aggregate into collective patterns of recognition, overlapping nominations were matched using partial phone numbers. This enabled the reconstruction of a sociometric network comprising 262 unique North Korean adults for group-level network representation. Finally, qualitative case illustrations drawn from in-depth interviews contextualise these network patterns, highlighting the implications of being recognised as a higher-status figure among the refugees. Table 1, presented in the subsequent section, details the descriptive statistics for the 136 egos and 1313 in-group ties.

Multilevel Egocentric Network Analysis

Multilevel modelling is used to account for the nested structure of the egocentric network data, where multiple tie-level observations are clustered within each

Table 1 Sample descriptive statistics

	Description	Mean/Prop	Min	Max
<i>Ego characteristics (n = 136)</i>				
Male	Ego gender (1 = men)	0.41	0	1
Age	Ego age in years	44.71 (13.13)	21	77
Year	Number of years in the UK	10.11 (3.22)	0	15
Marital status	Marital status (1 = married)	0.68	0	1
Child	Number of children	0.81	0	1
Kin-host	Number of extended kin in the UK	2.32 (3.62)	0	18
English proficiency	Self-rated English	2.19 (0.57)	1	4
Employment	Employment status (1 = part- or full-time employed)	0.58	0	1
Self-employment	Self-employment status (1 = self-employed)	0.15		
Citizenship	UK citizenship (1 = naturalised)	0.38	0	1
<i>Alters and ties (n = 1313)</i>				
Male	Alter gender (1 = men)	0.46	0	1
Age	Alter age in years	44.98 (12.70)	18	94
Education	Educational level	5.76 (1.52)	1	9
Full-time employment	Full-time employed	0.28	0	1
Self-employed	Self-employed	0.14	0	1
Family	Family tie	0.16	0	1
Friend	Friendship tie	0.39	0	1
Frequent contact	Frequent contact	0.65	0	1
Trust	High trust in alter	0.59	0	1
Financial support	Provides financial support	0.40	0	1
Social companionship	Provides companionship	0.70	0	1
Job information	Provides job information	0.22	0	1
General information	Provides general information	0.40	0	1
Language support	Provides language assistance	0.28	0	1
Emotional support	Provides emotional support	0.34	0	1

For binary variables, values are expressed as proportions. For continuous variables, values are means with standard deviations in parentheses

respondent. Separating the influence of individual (ego) characteristics from tie-specific (alter) attributes, multilevel modelling reduces bias arising from non-independent observations (McCarty et al., 2019). The dependent variable is the presence of a vertical bonding tie, and estimation proceeds through multilevel logistic models based on 1313 in-group nominations.¹ Because the criteria for status remained open

¹ A total of 1424 in-group nominations were recorded. Of these, 111 nominations that designated individuals as having lower status were excluded from the analysis, as higher, equal, and lower status ties represent conceptually distinct forms of hierarchy. The analysis therefore focuses on upward ties, where alters are perceived to hold greater influence, resources, or prestige. As a robustness check, the models were re-estimated on the full set of 1424 in-group nominations including lower status ties, with results remaining substantively unchanged (see Appendix Table A1).

to interpretation by the respondents, the variable represents a subjective indicator of relational deference and symbolic prestige rather than a fixed or objective rank.

Descriptive statistics for all independent variables are presented in Table 1. At the ego level, binary gender (1 = men), age in years, years of residence in the UK, and marital status (1 = married) are included as core sociodemographic variables. Family-related variables indicate whether respondents have a child in the UK and the number of kin living in the host country. Employment status distinguishes employed respondents (1 = part- or full-time) from those who are unemployed. A separate binary indicator identifies self-employment. Additional measures of acculturation include citizenship (1 = naturalised UK citizen), self-rated English proficiency (4 = native-like), and a count of non-co-ethnic contacts.

At the alter level, each nominated alter's gender (1 = men), age in years, education level² (9 = graduate degree), and employment status (coded separately for full-time and self-employment) is considered. Relationship type distinguishes family and friendship ties, which are each coded as a separate binary variable. Relationship quality is measured by frequency of contact and trust, both rated on 5-point scales and recoded as 1 when respondents reported moderately high or high levels. Binary indicators measure six types of potential support: financial help, companionship, information, English assistance, and emotional support. Because translation assistance is common among refugees, linguistic help is treated as practical support, while informational support distinguishes between general and job-specific guidance.

Network Representation of In-group Ties

The second stage of the quantitative analysis shifts from individual perceptions to a group-level view of how status ties are structured within the refugee group. While the multilevel models examine status recognition within respondents' personal networks, this step maps the collective organisation of deference across the entire group. Overlaps in nominations, identified through partial phone number matching, enabled the reconstruction of a larger network encompassing 262 unique North Korean adults, including both interviewed and non-interviewed individuals.

From these data, we constructed two group-level networks³ derived from respondents' tie-level status nominations. First, the *hierarchical network* aggregates vertical

² Education was measured on a 10-point scale from no education to doctorate. This variable captures the highest degree completed, thereby accounting for formal education respondents may have completed before seeking asylum in the UK (Song & Bell, 2019).

³ While these data reveal group-level patterns of status recognition, several design limitations should be noted. The survey's primary aim was to map active ethnic ties, so nominations reflect ongoing relationships rather than unrestricted choices of higher status co-ethnics. Consequently, the structure of status nomination networks might differ from what would emerge if participants had been asked to freely nominate higher status co-ethnics. Moreover, not all named alters participated, meaning the reconstructed networks represent partial approximations of the group's structure. In light of these limitations, additional checks were performed to ensure consistent findings, including analyses treating network nominations as both asymmetrical and reciprocal.

nominations where respondents identified an alter as higher in status, representing perceived authority or resource advantage. Second, the *peer network* aggregates horizontal nominations, reflecting more lateral ties anchored in shared social standing. To assess how recognition and influence are distributed within these networks, Bonacich power centrality^{4,5} ($\beta > 0$) was calculated for both hierarchical and peer networks. The measure was preferred over alternatives such as indegree centrality, which is determined through a raw count of nominations and treats all nominators as carrying equal weight. Bonacich centrality instead accounts for the recursive and relational properties of status, where an individual's standing depends on both their direct nominations and the prominence of those who recognise them, such that deference from a widely respected figure carries greater weight than deference from a peripheral actor (Bonacich, 1987). In the hierarchical network, higher Bonacich centrality captures more widespread acknowledgement of higher status and closer connections to other influential figures, while in the peer network, it signifies cohesion and mutual embeddedness among status equals.

The distinction between horizontal and vertical bonding ties (Ryan, 2011, 2023) suggests that meaningful status differentiation may arise within refugee groups. At the tie level, vertical nominations are expected to be directed toward in-group contacts associated with valued post-migration resources. At the group level, these nominations may also converge around highly recognised individuals, producing a hierarchical structure. Considered together, these two levels of analysis examine the expression of status in interpersonal judgements and its aggregation into a group-level hierarchy.

Qualitative Integration and Case Selection

All interviews were audio-recorded, transcribed verbatim, and analysed using NVivo (Lumivero). Following an inductive analytic approach (Charmaz, 2006), transcripts underwent iterative coding to ensure that analytic categories were developed directly from participants' accounts. Initial open coding of in-group ties, settlement experiences, and other social interactions was refined through axial coding into broader categories, including motivations for resource sharing and withdrawal. These were then consolidated into overarching themes concerning the boundaries and obligations shaping in-group interactions (Shin & Son, 2025; Son & Shin, 2025). The resulting thematic analysis provided interpretive context for the quantitative findings.

⁴ Bonacich's power centrality is an extension of eigenvector centrality, and it is more appropriate for directed networks (Borgatti et al., 2024).

⁵ A limitation of the measure is that there is no consensus as to the value of β that is theoretically relevant. The β parameter used in the analysis is 0.41, which is the maximum value close to $1/\lambda$ (the reciprocal of the largest eigenvalue), and hence, in the study context, even indirect or longer paths are important. As a robustness check, different values of β ranging from 0 to $1/\lambda$ were tested. The significance and direction of the results remained unchanged across all specifications, confirming that the findings are not sensitive to the choice of β .

To bridge the network findings with lived experience, two cases were selected to represent distinct forms of prominence within the hierarchical network. As the interview guide was not originally designed to probe status directly, these cases were selected retrospectively by linking interview narratives to respondents' network positions. One case concerns an individual who received a high number of direct vertical nominations, while the other centres on a respondent with high Bonacich centrality. Their narratives are used to interpret the quantitative indicators of vertical nominations and show how within-group stratification shapes the mobilisation of support through vertical in-group ties.

Results

Factors Underlying In-group Status Nominations

Table 2 presents the distribution of alter ties nominated by respondents, distinguishing between vertical and horizontal categories. After excluding lower-status ties, the analysis focuses on 1313 nominations, of which approximately 30% (389 nominations) were classified as vertical and 70% (924 nominations) as horizontal. These figures indicate that most in-group contacts remain at a horizontal level, and a smaller subset is perceived to hold higher status.

A closer look at how ties are distributed by perceived status reveals several patterns. First, men represent a larger share of vertical ties (52%) than horizontal ties (43%). Second, higher-status alters tend to have more education on average and are nearly twice as likely to be self-employed than horizontal ties (20% vs 11%). Relationship type also plays a role. Vertical nominations are more likely to involve kin, highlighting the symbolic weight of family ties in conferring respect. Yet friendships still constitute a substantial portion of vertical ties, showing that status recognition also circulates through non-kin networks. Finally, higher trust and a significant availability of informational, instrumental, and emotional support mark vertical ties, suggesting that the perceived hierarchy within the group is closely tied to the embeddedness of resources.

The descriptive findings show that perceptions of higher status correspond meaningfully with alter demographics, relationship types, and support exchanges. Table 3 presents multilevel models in log-odds and odds ratios, examining the factors that shape vertical nominations within in-group ties. The interpretation proceeds on two levels: first, respondent (ego) characteristics that affect the likelihood of nominating a contact as higher status; second, alter characteristics that increase the likelihood of being recognised as higher status within the in-group network.

At the ego level, having paid employment shows an odds ratio of 0.185, indicating an 82% reduction in the odds that a respondent will nominate a contact as holding higher status. Each additional unit of self-rated English proficiency corresponds to an odds ratio of 0.350 or a 65% decrease. A plausible explanation is that respondents with greater economic stability and language skills perceive themselves as occupying relatively higher positions within the group's internal

Table 2 Distribution of alter ties by horizontal and vertical status ($N=1313$)

	Horizontal ($n=924$)	Vertical ($n=389$)	Sig
<i>Alter characteristics</i>			
Male	0.43	0.52	$p<0.01$
Age	43.86 (12.89)	43.75 (12.80)	$p<0.05$
Education	5.19 (1.19)	5.47 (1.35)	$p<0.01$
Full-time employment	0.27	0.31	-
Self-employed	0.11	0.20	$p<0.01$
<i>Relationship type</i>			
Family	0.21	0.28	$p<0.01$
Friend	0.43	0.38	$p<0.05$
<i>Relationship characteristics</i>			
Frequent contact	0.64	0.68	-
Trust	0.60	0.72	-
<i>Support exchange</i>			
Financial support	0.45	0.48	-
Social companionship	0.73	0.70	-
Job information	0.20	0.23	-
General information	0.41	0.46	$p<0.05$
Language support	0.18	0.42	$p<0.01$
Emotional support	0.34	0.51	$p<0.01$

For binary variables, values show the proportion of ties with the attribute. For continuous variables, values are the mean (SD) of alter characteristics. The final column indicates significance of differences between horizontal and vertical categories

hierarchy. Consequently, they may perceive fewer in-group contacts as possessing the significant status advantage required for a vertical nomination.

Certain sociodemographic characteristics of the nominated alters simultaneously influence the expression of deference. At the alter level, alters who completed higher education are about 35% more likely to be perceived as high status, those holding a full-time job are roughly three times as likely, and those who are self-employed are more than six times as likely. These patterns support the descriptive results showing that alters with more extensive human capital or entrepreneurial involvement command higher standing in the community's status hierarchy.

Tie-specific attributes further clarify the dynamics of vertical relationships. Ties defined as friendships have about 45% lower odds of being recognised as higher status. Conversely, ties characterised by high trust are about twice as likely to be perceived as vertical. Access to key resources further differentiates these ties. Receiving language assistance makes a tie more than three times more likely to be recognised as vertical, while emotional support nearly doubles the odds. Job information emerges as significant in the multilevel model, with ties offering such information showing more than twice the odds (2.283) of being recognised as

Table 3 Multilevel models of vertical in-group nomination

	<i>Logit coefficient</i>	<i>Odds ratio</i>
<i>Ego-level</i>		
Male	−0.191 (0.450)	0.826 (0.371)
Age	0.010 (0.019)	1.010 (0.020)
Year	−0.063 (0.077)	0.939 (0.072)
Marital status	−0.234 (0.491)	0.791 (0.389)
Child	−0.349 (0.586)	0.706 (0.414)
Kin-host	−0.063 (0.059)	0.939 (0.055)
English proficiency	−1.051* (0.409)	0.350* (0.143)
Employment	−1.690** (0.505)	0.185** (0.093)
Self-employment	−1.302 (0.725)	0.272 (0.197)
Citizenship	−0.631 (0.536)	0.532 (0.285)
Bridging contacts	−0.024 (0.097)	0.977 (0.095)
<i>Alter-level</i>		
Male	0.166 (0.214)	1.181 (0.252)
Age	−0.002 (0.008)	0.998 (0.008)
Education	0.294** (0.079)	1.342** (0.106)
Full-time employment	0.930** (0.233)	2.534** (0.590)
Self-employed	1.733** (0.322)	5.659** (1.820)
Family	−0.059 (0.293)	0.943 (0.276)
Friend	−0.508* (0.241)	0.602* (0.145)
Frequent contact	−0.297 (0.233)	0.743 (0.173)
Trust	0.702** (0.261)	2.017** (0.527)
Financial support	0.124 (0.250)	1.132 (0.283)
Social companionship	−0.334 (0.247)	0.716 (0.177)
Job information	0.910** (0.291)	2.485** (0.723)
General information	−0.016 (0.229)	0.985 (0.226)
Language support	1.135** (0.240)	3.110** (0.746)
Emotional support	0.555* (0.246)	1.742* (0.429)

Standard errors in parentheses

** $p < 0.01$, * $p < 0.05$

higher status. The descriptive statistics in Table 2 indicate a higher proportion of kin among vertical ties, but the multilevel models indicate neither family tie nor alter age is a statistically significant predictor. That is, post-migration markers of institutional navigational capacity appear to supersede ascribed markers such as kinship and age in structuring deference.

Taken together, the descriptive findings and multilevel results demonstrate that refugees subtly distinguish between horizontal and vertical ties. Although the majority of in-group connections are horizontal, certain alter characteristics, such as self-employment, are pivotal in setting vertical contacts apart. Vertical ties also stand out for their stronger trust and role as conduits for critical informational, instrumental, and emotional support. These observations challenge the

common assumption that dense in-group ties invariably provide robust emotional and material support. Instead, vertical ties characterised by higher trust, greater resource availability, and a willingness to help may serve as effective conduits for meeting critical needs and facilitating adaptation (Ryan, 2011).

Peer and Hierarchical Networks at the Group Level

The multilevel models identify the factors underlying status differentiation among refugees. These models, however, do not provide an overview of the refugee group's network structure or identify overlaps in nominations. To address this, the analysis turns to the global structure of the peer and hierarchical networks. Examining the peer and hierarchical networks at a group level helps illustrate how individual perceptions aggregate into a collective structure of respect and how recognition becomes concentrated.

Figure 1 displays the peer network, where nodes represent individuals and node size reflects the number of horizontal nominations received. Of the 262 unique individuals identified in the refugee community, 253 appear in the peer network, indicating that at least one respondent named them as a peer with whom they maintain active contact. The average indegree for all nodes is 3.57 ($SD=2.88$) with a range from 0 to 19. The distribution is slightly right skewed, with over 25% of nodes receiving one nomination, 3.6% receiving no nominations, and about 50% receiving between 2 and 5 nominations.

Figure 2 presents the hierarchical network and shows an even more significant overlap in vertical nominations. It includes 188 individuals with an average indegree of 1.43 ($SD=1.52$), ranging from 0 to 10. The right-skewed distribution underscores a clear hierarchy. While many individuals received few or no higher-status nominations (25% have none; 40% have one), a small subset has accumulated multiple nominations and stands out as widely respected or influential figures within the refugee community.

The two networks reveal a structural contrast. The peer network is expansive, encompassing nearly all identified refugees, whereas the hierarchical network is sparser and markedly concentrated. Where horizontal ties connect the community broadly, vertical ties cluster around a few prominent figures, indicating that status depends on the selective expression of deference and recognition. Examining hierarchical and peer networks as divergent structures makes the underlying stratification visible, revealing that meaningful differences exist within the group.

To further explore the characteristics associated with a central position in the hierarchical network, a regression analysis was performed on Bonacich beta centrality scores. Figure 3 presents the estimated coefficients with 95% confidence intervals. The wide confidence intervals observed for most variables likely reflect the group's small size and partial network reconstruction, despite the sample covering nearly half of eligible adults. Consequently, non-significant coefficients may indicate limited power to detect smaller effects as opposed to the absence of meaningful associations. The convergence of these results with the tie-level multilevel models nonetheless reinforces confidence in the identified predictors.

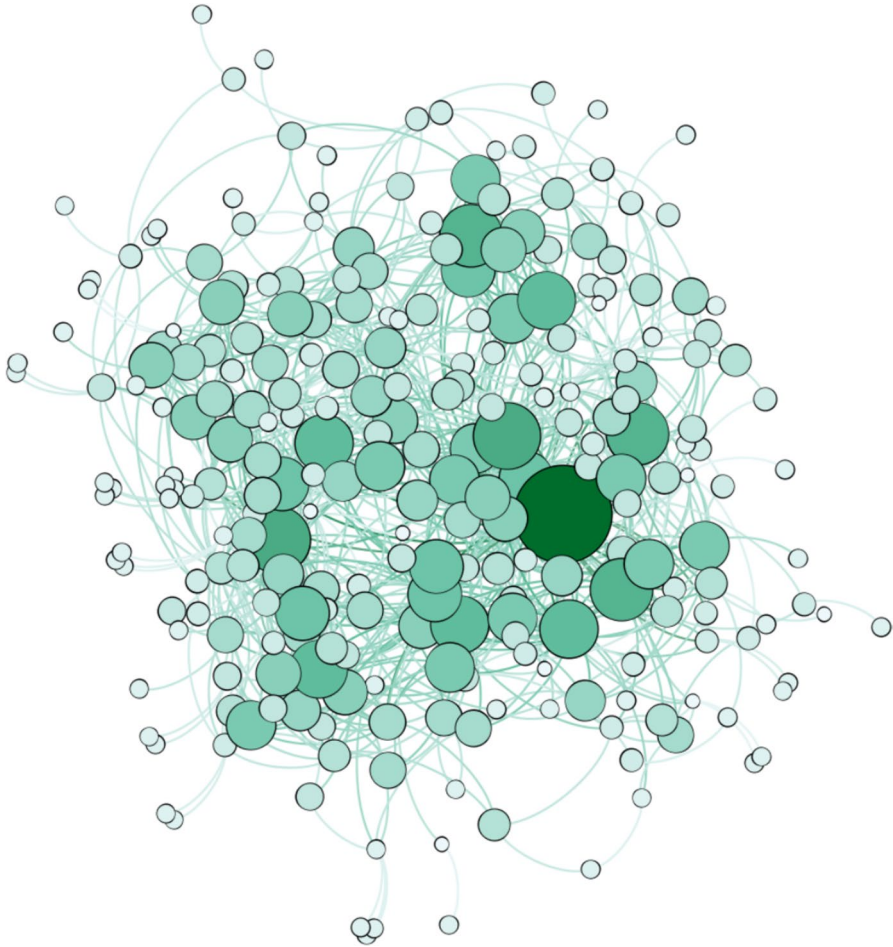


Fig. 1 Peer network (aggregated horizontal nominations). Note. Network visualisation is generated using Gephi. Solid lines indicate incoming nominations received by a node as a status-equal contact. Edge length and node placement are artefacts of the layout algorithm and are not analytically meaningful indicators of relationship distance

Consistent with the multilevel models of egocentric networks, self-employed individuals occupy more central positions in the hierarchical network. Additionally, a higher number of kin and out-group contacts is also linked to greater centrality in the hierarchical network. In contrast, only years of residence in the UK is predictive of centrality in the peer network. These findings suggest that individuals who are perceived as better adjusted and well-connected are more likely to be recognised as holding higher status. In particular, those with a greater number of out-group contacts tend to occupy more central positions in the hierarchical network, implying that out-group connections could enhance intra-group standing or the same attributes that confer status may also enable out-group contact formation. Regardless of

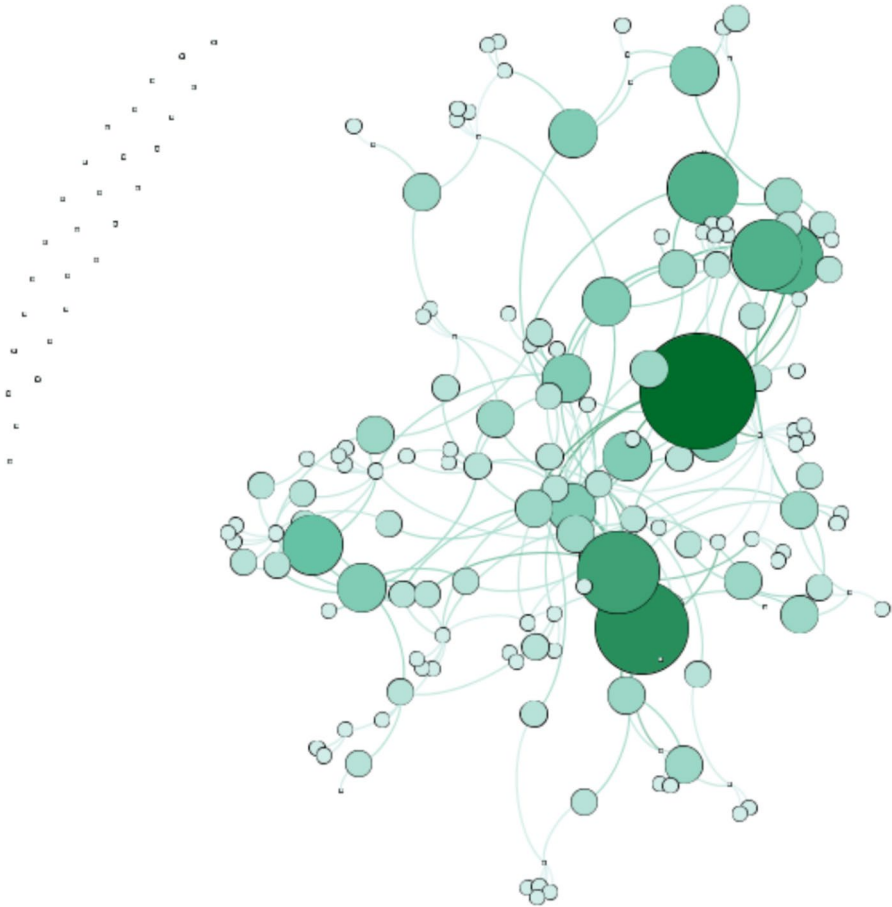


Fig. 2 Hierarchical network (aggregated vertical nominations). Note. Network visualisation generated using Gephi. Solid lines indicate incoming nominations received by a node as a higher-status contact. Edge length and node placement are artefacts of the layout algorithm and are not analytically meaningful indicators of relationship distance

the causal direction, the correlation between out-group ties and hierarchical centrality suggests that vertical ties to co-ethnics who maintain strong out-group connections may serve as an important pathway for resource acquisition. In this way, the advantages gained from external contacts have the potential to circulate within the in-group network, illustrating how social hierarchies within migrant communities may channel and redistribute opportunities across the ethnic community.

Illustrative Cases

The network analysis reveals that the possession of resources and the collective recognition of merit define hierarchical differentiation among participants. While

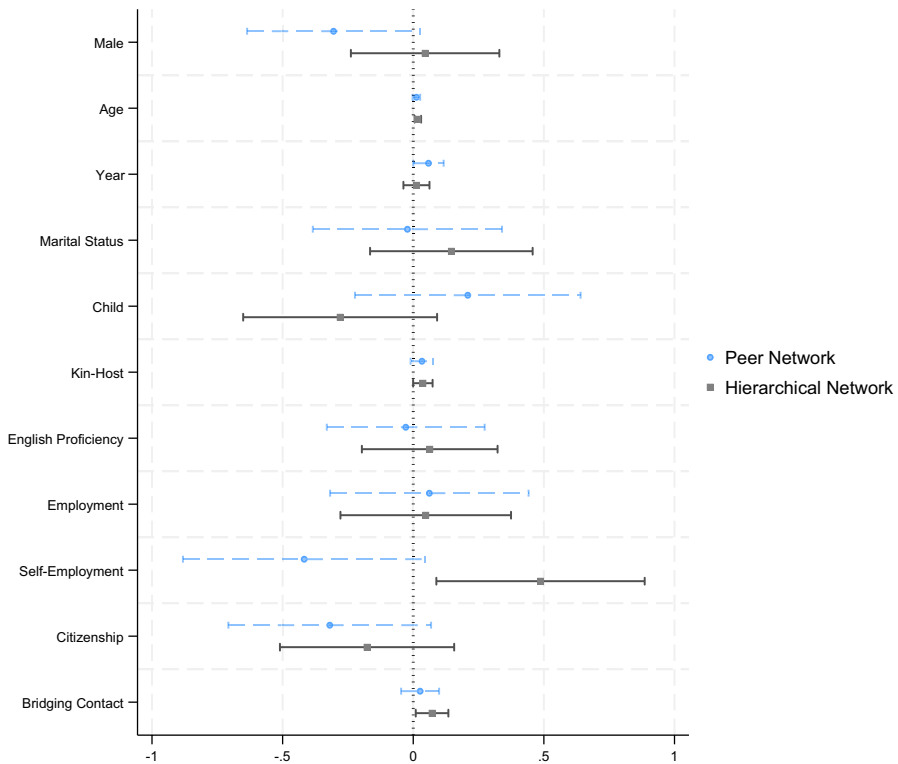


Fig. 3 Predictors of centrality in peer and hierarchical networks

maintaining ties with higher-status contacts can provide security in a context marked by uncertainty, the narratives of those with high status show that status is enacted in different ways. Some individuals use their relative advantage and visibility to channel resources downward, reinforcing their standing through service to the community, whereas others maintain influence through socioeconomic stability while keeping resource flows more restricted (Ryan, 2011, 2016). The following two cases illustrate these contrasting expressions of status within the network and highlight the ways vertical-bonding ties may either facilitate or constrain integration among marginalised refugees.

Lim,⁶ a man in his 50 s, represents an *open broker* whose status is grounded in his willingness to mobilise resources and assist others. In the network map of vertical nominations (see Fig. 2), he stands out as a central figure, having received one of the highest numbers of direct vertical nominations (i.e. eight). Only one other person, a woman⁷ known for her generosity, sits above him. He is simultaneously a central node in the contact network, maintaining extensive connections with fellow

⁶ All names are pseudonyms. The inclusion of personal details is minimised to protect the identities of the interviewees.

⁷ She participated in the network survey but declined to be interviewed in the qualitative phase.

refugees. Many research participants spoke of Lim with deference, saying that he readily supports anyone in need, and several named him as one of their important local contacts. Employed full-time, he is known for helping others find work and is often approached for practical and emotional advice. Even an interviewee who was generally critical of the North Korean community and remained distant from others remarked: “I’m not friends with [Lim], but he finds me work. There aren’t many people worth respecting [in the refugee community], but he’s okay. He is definitely doing better than others.”

Lim firmly emphasised his commitment to supporting other North Koreans in his interview but said that this commitment only emerged after his first eight years in the UK. At first, he devoted all his energy to making ends meet and advancing in his workplace. His perspective shifted when he realised the importance of a strong support network, especially in times of crisis:

People can make mistakes in life. For North Koreans, however, many of us live with uncertain legal status. If we are forced to leave, we have nowhere else to turn. When unfortunate incidents arise, petitions can help plead our cases, and that’s exactly when we need the community to step up. Recently, an elderly member passed away, and we raised 750 pounds to help the bereaved family. I’ve come to believe that a well-organised, well-functioning support network is vital. North Korean refugees are unique in that we share so many similarities. South Korean immigrants, for example, left their country at different times and for different reasons, so they are more diverse. But most North Koreans defected under similar circumstances, leaving behind our homes and families. We have no one to rely on but each other, so we need to watch each other’s backs. That’s why I help everyone even if I am not personally close with them. I have the strength to do so.

Lim was a willing and open vertical weak tie who acts as a bridge by connecting less-advantaged North Koreans to resources (such as jobs). He expressed a significant level of ethnic solidarity (Portes, 1998) through his willingness to help others. In line with his expansive approach to helping others, even those who are not close to him held him in high esteem and recognised his vertical status in the wider network.

While Lim’s recognition rested on direct expressions of respect from many within the community, Park more fully embodied the essence of status in the network. His network position carried the highest Bonacich centrality score, indicating the authority that comes from proximity to other respected actors. Despite having a moderately sized contact network and relatively few direct nominations, Park attained an influential position by virtue of his ties to other prominent nodes; in effect, much of his status derives from those to whom he is connected.

In his 50 s and self-employed, Park maintained close bonds with other self-employed men, and his demographic characteristics closely mirrored the individual-level traits identified in the quantitative analysis as predictive of high status. Unlike Lim, who actively maintained strong connections with a wide range of people, Park, a *selective gatekeeper*, deliberately remained on the periphery of the overall contact network, preferring a niche of “like minds”. He received direct nominations of

respect from his immediate circle, and his proximity to more influential network actors further elevated his standing. He explained:

When I defected from North Korea, I left everything behind, including my way of life. I wanted to start fresh in a new country. That's my ethos. I don't want to meddle in anyone's life. I just want to make money for my family, and my friends share a similar outlook. I do sometimes go to [North Korean] gatherings, but honestly, it appals me that they still act like they're living in North Korea. I don't find relationships with many North Koreans particularly necessary or helpful. The important thing is that like attracts like. People with similar aptitudes naturally flock together. In the end, we all stay in our own little circles.

Park held high status due to his relative socioeconomic position, yet he was not open to sharing his resources. He was wary of the demands other, less fortunate North Koreans might place on him. His network consisted of personal ties and appeared to be rather closed and exclusive, offering few opportunities for reciprocal relationships with his in-group contacts. Hence, he could have served as a valuable vertical weak tie—a bridge to resources—for many others, but, unlike Lim, Park firmly rejected this role in the network.

At the centre of both cases is a shared status advantage, though its implications for support differ markedly. For Lim, repeated acts of assistance actively generated and reinforced the deference he received. Park's standing, by contrast, persisted despite his reluctance to help, showing that high status can be sustained through socioeconomic success even when support remains withheld. The contrast highlights the gap between the existence of ties and the mobilisation of the resources embedded within them. The presence of a tie to a higher-status contact does not itself guarantee access to assistance (Lin, 2001). Vertical bonding ties hold considerable promise as channels of support, but whether that potential is realised depends on the motivations and dispositions of those occupying higher-status positions (Smith, 2005).

Discussion

Building upon foundational conceptualisation of horizontal and vertical ties (Ryan, 2011, 2023), this study refines and advances theories of migrant networks by bringing to the fore the role of intra-group status. While existing scholarships have emphasised weak ties beyond ethnic boundaries for socioeconomic mobility, we redirect analytical attention to diversity and social distance *within* refugee networks. This inward orientation reveals how vertical-bonding connections, through bridging status gaps among co-ethnics, expand understanding of which social ties matter for adaptation when inter-group bridging remains limited.

Our theoretical contribution materialises through the empirical case of North Korean refugees in London (Shin, 2022, 2025), an unusually hidden and marginalised population in the Global North. The data capturing individual-level network

interactions reveals that internal status differentiation significantly influences refugees' resource access and support acquisition. Moreover, patterns of vertical nominations show that specific individuals command consistent recognition through perceived merit and trustworthiness. Beneath a façade of uniformity, certain members occupy relatively advantageous positions for providing guidance and resources, with the potential to yield greater returns than peer connections.

Notably, self-employment emerges as a consistent predictor of higher status across both tie-level and network-level analyses. Its significance likely reflects both its visibility as a marker of economic independence and its perceived connection to employment opportunities (Portes & Sensenbrenner, 1993; Waldinger, 1996). Yet the deference attached to self-employment appears more symbolic than transactional. Although the survey permitted multiple selections to characterise each relationship, only a negligible share of ties to self-employed individuals involved an employer–employee dimension. Recognition therefore seems to stem less from direct material dependence than from admiration for economic autonomy, an especially salient achievement in a context where refugees and other first-generation migrants face restricted access to primary labour markets. Relatedly, the data illuminates possible gendered effects in the network hierarchy. Gender is not an independent predictor of status in the quantitative models, but men are disproportionately represented among the self-employed and full-time workers who command deference, suggesting that gendered access to labour market opportunities indirectly shapes the network hierarchy. How origin-country gender expectations interact with destination-country structural barriers to produce this pattern warrants dedicated investigation.

The observed diversity among North Koreans, an ostensibly homogeneous group, suggests that vertical and horizontal ties together offer a powerful framework for analysing the structure and meaning of relationships within migrant networks. However, the potential of vertical bonding ties to function like bridging ties, allowing valuable resources to circulate within ethnic networks, depends critically on the willingness of higher-status individuals to share their advantages. Neither ethnic homophily nor the mere presence of relationships ensures assistance. Resource exchanges instead rest on motivation, consistent with the distinction between accessed and mobilised social capital (Lin, 2001).

The case of Park illustrates that a tie can exist but remain inactive unless the higher-status contact chooses to provide instrumental help, as Lim does. When a prosocial intent is present, vertical bonding can substitute for limited inter-group bridging by providing job referrals and institutional guidance. When intent is absent, esteem remains but exchanges stall, such that vertical ties do not mitigate the disadvantages of marginalised co-ethnics. Even when support is mobilised, however, its longer-run implications are more ambiguous. Open brokerage may address immediate needs but not necessarily produce mobility. At the same time, proximity to a selective gatekeeper may confer indirect returns through reputational signals and exposure to exclusive social circles independently of any resources transferred, potentially reinforcing cumulative advantage for those closest to high-status actors.

Understanding when vertical ties generate durable returns therefore requires attention to two related questions. The first is whether mere proximity to a

high-status co-ethnic yields passive benefits even in the absence of direct assistance. Exposure to higher-status circles may shape refugees' reputations and practical repertoires for navigating institutions, generating incremental advantages even when explicit support is withheld. Still, direct resource transfer may matter more than symbolic proximity for improving material outcomes. This raises the second question of why some higher-status individuals share resources while others practise social closure. One promising direction is to examine the perceived costs of helping and the moral meanings attached to mobility. For some upwardly mobile individuals, assistance may be treated as an obligation rooted in linked fate and a shared narrative of collective advancement, consistent with a minority culture of mobility (Vallejo, 2012). For others, support may be constrained by concerns that repeated requests threaten hard-won stability, making boundary-setting a rational strategy (Smith, 2005). Disentangling whether such patterns stem from internalised norms of co-ethnic obligation, the socioeconomic security that lowers the perceived cost of sponsorship, or an interaction in which strong obligations are suppressed when helping is perceived as a reputational liability remains a key task for future research.

Furthermore, extending this line of inquiry beyond the North Korean case would help determine how internal hierarchies operate across different contexts. Similar patterns are most likely in small, dense, and socially marginalised groups where destination-relevant resources are scarce and inter-group bridging is constrained. Differences may emerge where groups exhibit greater internal heterogeneity. For instance, legal status did not independently predict recognition in our sample, most likely because North Korean refugees in the UK share a nearly identical asylum trajectory. In groups where legal status is tied to more divergent migration pathways or where it determines access to employment and resources, its role in shaping intra-group hierarchies may be more pronounced.

Several methodological limitations warrant acknowledgement. First, because the study focused on active in-group ties, the elicitation questions traced connections that respondents currently maintain, excluding other individuals they recognise as prominent or influential. Second, status was operationalised through a tie-specific comparative judgement asking respondents to classify each contact as higher, equal, or lower than themselves. This is consistent with the relational and interactional nature of status recognition but inevitably reduces a fluid process to a fixed categorical assessment. Visual and interactive elicitation methods offer a promising avenue for yielding more granular accounts of the hierarchical distinctions within personal networks in future work (Targarona Rifa et al., 2025). Finally, explicit comparisons of relative standing may be culturally uncomfortable, potentially encouraging conservative responses or a default to equal-status designations. Given these limitations, the hierarchical network presented in the study should be interpreted as representing the vertical contacts that respondents actively maintain and could potentially mobilise, as opposed to a complete inventory of prominent actors within the group. Future research could address this by adopting name generators that elicit whom respondents respect, seek advice from, or view as influential, assessing symbolic prestige and reputational standing that circulate independently of active contact.

Conclusion

The study responds to calls for closer attention to status differences, hierarchy, and resource distribution within migrant networks (Bygnes, 2021; Ryan, 2016), demonstrating that seemingly homogeneous groups harbour significant internal stratification. While resources gained through in-group relationships may not fully secure socioeconomic stability in the destination country, they can nonetheless play a pivotal role, particularly for stigmatised populations with limited institutional support and restricted opportunities for inter-group bridging. Within these networks, vertical bonding ties can become an important channel for accessing new information and practical support. Importantly, the study brings into view the under-researched role of vertical ties within co-ethnic networks. By disaggregating co-ethnic bonding ties into horizontal and vertical dimensions, it demonstrates that intra-ethnic relationships can bridge meaningful status differences, generating resources and opportunities assumed to require crossing ethnic boundaries.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s12134-026-01395-w>.

Acknowledgements We thank Prof. Roger Patulny and Prof. Arthur Sakamoto for their valuable feedback on earlier drafts of this manuscript. We also extend our sincere gratitude to the study participants, who shared experiences that may have been difficult to revisit.

Author Contributions HS designed the study, collected and analysed the data, and generated network visualisations. LR contributed to the study conceptualisation and analysis. All authors interpreted the findings, drafted and critically revised the manuscript, approved the final version, and agreed to be accountable for all aspects of the work.

Funding This research was supported by NRF-2015H1A2A1034022.

Data Availability No datasets were generated or analysed during the current study.

Declarations

Ethics Approval The Institutional Review Board of Korea University (KUIRB-2019-0012-01) approved all study procedures, and all participants provided informed consent.

Competing interests The authors declare no competing interests.

Clinical Trial Registration Not applicable.

Open Access This article is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License, which permits any non-commercial use, sharing, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if you modified the licensed material. You do not have permission under this licence to share adapted material derived from this article or parts of it. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by-nc-nd/4.0/>.

References

- Aguilera, M. B., & Massey, D. S. (2003). Social capital and the wages of Mexican migrants: New hypotheses and tests. *Social Forces*, 82(2), 671–701. <https://doi.org/10.1353/sof.2004.0001>
- Alba, R. D., & Nee, V. (2003). *Remaking the American mainstream: Assimilation and contemporary immigration*. Cambridge, MA: Harvard University Press. <https://doi.org/10.4159/9780674020115>
- Anthias, F. (2007). Ethnic ties: Social capital and the question of mobilisability. *The Sociological Review*, 55(4), 788–805. <https://doi.org/10.1111/j.1467-954X.2007.00752.x>
- Anthias, F., & Cederberg, M. (2009). Using ethnic bonds in self-employment and the issue of social capital. *Journal of Ethnic and Migration Studies*, 35(6), 901–917. <https://doi.org/10.1080/13691830902957692>
- Aral, S., & Van Alstyne, M. (2011). The diversity–bandwidth trade-off. *American Journal of Sociology*, 117(1), 90–171. <https://doi.org/10.1086/661238>
- Barbulescu, R. (2015). The strength of many kinds of ties: Unpacking the role of social contacts across stages of the job search process. *Organization Science*, 26(4), 1040–1058. <https://doi.org/10.1287/orsc.2015.0978>
- Bilecen, B., & Cardona, A. (2018). Do transnational brokers always win? A multilevel analysis of social support. *Social Networks*, 53, 90–100. <https://doi.org/10.1016/j.socnet.2017.03.001>
- Blau, P. M. (1964). *Exchange and power in social life*.
- Blau, P. M. (1977). A macrosociological theory of social structure. *American Journal of Sociology*, 83(1), 26–54. <https://doi.org/10.1086/226505>
- Bonacich, P. (1987). Power and centrality: A family of measures. *American Journal of Sociology*, 92(5), 1170–1182. <https://doi.org/10.1086/228631>
- Borgatti, S. P., Agneessens, F., Johnson, J. C., & Everett, M. G. (2024). *Analyzing social networks*. Sage.
- Bourdieu, P. (1986). The forms of capital. In J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241–258). Greenwood Press.
- Boyd, M. (1989). Family and personal networks in international migration: Recent developments and new agendas. *International Migration Review*, 23(3), 638–670. <https://doi.org/10.1177/019791838902300313>
- Bygnes, S. (2021). Not all Syrian doctors become taxi drivers: Stagnation and continuity among highly educated Syrians in Norway. *Journal of International Migration and Integration*, 22(1), 33–46. <https://doi.org/10.1007/s12134-019-00717-5>
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Sage.
- Chuatico, G., & Haan, M. (2022). Bonding social ties: Relative human capital and immigrant network choices. *Journal of Ethnic and Migration Studies*, 48(7), 1690–1710. <https://doi.org/10.1080/1369183X.2020.1756761>
- Correa-Velez, I., Green, A., Murray, K., Schweitzer, R. D., Vromans, L., Lenette, C., & Brough, M. (2020). Social context matters: Predictors of quality of life among recently arrived refugee women-at-risk living in Australia. *Journal of Immigrant & Refugee Studies*, 18(4), 498–514. <https://doi.org/10.1080/15562948.2020.1734893>
- Del Real, D. (2019). Toxic ties: The reproduction of legal violence within mixed-status intimate partners, relatives, and friends. *International Migration Review*, 53(2), 548–570. <https://doi.org/10.1177/0197918318769313>
- Eve, M. (2014). Integrating via networks: Foreigners and others. In J. Schneider & M. Crul (Eds.), *Theorizing integration and assimilation* (pp. 88–105). Routledge.
- Fischer, C. S. (2009). The 2004 GSS finding of shrunken social networks: An artifact? *American Sociological Review*, 74(4), 657–669. <https://doi.org/10.1177/000312240907400408>
- Fu, Y., Velema, M., & Chuang, Y.-T. (2018). Status inconsistency in groups: How it impacts group identification and subjective well-being. *Social Networks*, 54, 254–265. <https://doi.org/10.1016/j.socnet.2018.03.002>
- Goode, W. J. (1978). *The celebration of heroes: Prestige as a social control system*. University of California Press.
- Gould, R. V. (2002). The origins of status hierarchies: A formal theory and empirical test. *American Journal of Sociology*, 107(5), 1143–1178. <https://doi.org/10.1086/341744>
- Granovetter, M. (1973). The strength of weak ties. *American Journal of Sociology*, 78(6), 1360–1380. <https://doi.org/10.1086/225469>

- Granovetter, M. (1985). Economic action and social structure: The problem of embeddedness. *American Journal of Sociology*, 91(3), 481–510. <https://doi.org/10.1086/228311>
- Heckathorn, D. D. (1997). Respondent-driven sampling: A new approach to the study of hidden populations. *Social Problems*, 44(2), 174–199. <https://doi.org/10.2307/3096941>
- Heckathorn, D. D. (2002). Respondent-driven sampling II: Deriving valid population estimates from chain-referral samples of hidden populations. *Social Problems*, 49(1), 11–34. <https://doi.org/10.1525/sp.2002.49.1.11>
- Heckathorn, D. D. (2007). Extensions of respondent-driven sampling: Analyzing continuous variables and controlling for differential recruitment. *Sociological Methodology*, 37(1), 151–207. <https://doi.org/10.1111/j.1467-9531.2007.00188.x>
- Kalter, F., & Kogan, I. (2014). Migrant networks and labor market integration of immigrants from the former Soviet Union in Germany. *Social Forces*, 92(4), 1435–1456. <https://doi.org/10.1093/sf/sot155>
- Kim, M., & Fernandez, R. M. (2017). Strength matters: Tie strength as a causal driver of networks' information benefits. *Social Science Research*, 65, 268–281. <https://doi.org/10.1016/j.ssresearch.2016.11.003>
- Kornienko, O., Agadjanian, V., Menjívar, C., & Zotova, N. (2018). Financial and emotional support in close personal ties among Central Asian migrant women in Russia. *Social Networks*, 53, 125–135. <https://doi.org/10.1016/j.socnet.2017.04.006>
- Kracke, N., & Klug, C. (2021). Social capital and its effect on labour market (mis)match: Migrants' overqualification in Germany. *Journal of International Migration and Integration*, 22(4), 1573–1598. <https://doi.org/10.1007/s12134-021-00817-1>
- Lancee, B. (2012). *Immigrant performance in the labour market: Bonding and bridging social capital*. Amsterdam University Press.
- Leszczensky, L., & Pink, S. (2019). What drives ethnic homophily? A relational approach on how ethnic identification moderates preferences for same-ethnic friends. *American Sociological Review*, 84(3), 394–419. <https://doi.org/10.1177/0003122419846849>
- Lin, N. (1999). Building a network theory of social capital. *Connections*, 22(1), 28–51.
- Lin, N. (2001). *Social capital: A theory of social structure and action*. Cambridge University Press.
- McCarty, C., Lubbers, M. J., Vacca, R., & Molina, J. L. (2019). *Conducting personal network research: A practical guide*. Guilford Press.
- Mouw, T., Chavez, S. E., Edelblute, H. M., & Verdery, A. M. (2014). Binational social networks and assimilation: A test of the importance of transnationalism. *Social Problems*, 61(3), 329–359. <https://doi.org/10.1525/sp.2014.12192>
- Nannestad, P., Svendsen, G. L. H., & Svendsen, G. T. (2008). Bridge over troubled water? Migration and social capital. *Journal of Ethnic and Migration Studies*, 34(4), 607–631. <https://doi.org/10.1080/13691830801961621>
- Parsons, T. (1963). On the concept of influence. *Public Opinion Quarterly*, 27(1), 37–62. <https://doi.org/10.1086/267148>
- Patulny, R. V., & Svendsen, G. L. H. (2007). Exploring the social capital grid: Bonding, bridging, qualitative, quantitative. *International Journal of Sociology and Social Policy*, 27(1/2), 32–51. <https://doi.org/10.1108/01443330710722742>
- Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual Review of Sociology*, 24, 1–24. <https://doi.org/10.1146/annurev.soc.24.1.1>
- Portes, A., & Rumbaut, R. G. (2006). *Immigrant America: A portrait* (3rd ed.). University of California Press.
- Portes, A., & Sensenbrenner, J. (1993). Embeddedness and immigration: Notes on the social determinants of economic action. *American Journal of Sociology*, 98(6), 1320–1350.
- Putnam, R. D. (2000). Bowling alone: The collapse and revival of American community. *Simon Schuster*.
- Robertson, S. (2019). Status-making: Rethinking migrant categorization. *Journal of Sociology*, 55(2), 219–233. <https://doi.org/10.1177/1440783318791761>
- Ryan, L. (2011). Migrants' social networks and weak ties: Accessing resources and constructing relationships post-migration. *The Sociological Review*, 59(4), 707–724. <https://doi.org/10.1111/j.1467-954X.2011.02030.x>
- Ryan, L. (2016). Looking for weak ties: Using a mixed methods approach to capture elusive connections. *The Sociological Review*, 64(4), 951–969. <https://doi.org/10.1111/1467-954X.12395>
- Ryan, L. (2023). *Social networks and migration: Relocations, relationships and resources*. Bristol University Press. <https://doi.org/10.56687/9781529213577>

- Ryan, L., Sales, R., Tilki, M., & Siara, B. (2008). Social networks, social support and social capital: The experiences of recent polish migrants in London. *Sociology*, 42(4), 672–690. <https://doi.org/10.1177/0038038508091622>
- Sanders, J., Nee, V., & Sernau, S. (2002). Asian immigrants' reliance on social ties in a multiethnic labor market. *Social Forces*, 81(1), 281–314. <https://doi.org/10.1353/sof.2002.0058>
- Sauder, M., Lynn, F., & Podolny, J. M. (2012). Status: Insights from organizational sociology. *Annual Review of Sociology*, 38, 267–283. <https://doi.org/10.1146/annurev-soc-071811-145503>
- Shin, H. (2022). Is trust really there? Unpacking the role of trust in ethnic friendship networks of North Korean refugees. *Social Networks*, 70, 208–217. <https://doi.org/10.1016/j.socnet.2022.01.016>
- Shin, H. (2025). Crossing boundaries: Ethnic trust network and expanded social engagement among North Korean Refugees in London. *International Migration Review*. <https://doi.org/10.1177/01979183251329025>
- Shin, H., & Son, I. (2025). Disenchanted comradery: The social process of persistent mistrust among North Korean refugees in the United Kingdom. *Population, Space and Place*, 31, e2856. <https://doi.org/10.1002/psp.2856>
- Shin, H., & Yoon, I.-J. (2023). The limits of primordial affinity to ethnic trust: The social origins of ethnic trust among North Korean refugees in London. *Journal of Refugee Studies*, 36(1), 84–104. <https://doi.org/10.1093/jrs/feac016>
- Small, M. L. (2011). How to conduct a mixed methods study: Recent trends in a rapidly growing literature. *Annual Review of Sociology*, 37(1), 57–86.
- Smith, S. S. (2005). “Don’t put my name on it”: Social capital activation and job-finding assistance among the Black urban poor. *American Journal of Sociology*, 111(1), 1–57.
- Snijders, T. A. B., Lomi, A., & Torló, V. J. (2013). A model for the multiplex dynamics of two-mode and one-mode networks, with an application to employment preference, friendship, and advice. *Social Networks*, 35(2), 265–276. <https://doi.org/10.1016/j.socnet.2012.05.005>
- Son, I., & Shin, H. (2025). Symbolic ethnicity and alternative adaptation among North Korean refugees in the United Kingdom. *Ethnicities*. <https://doi.org/10.1177/14687968251385588>
- Song, J. J., & Bell, M. (2019). North Korean secondary asylum in the UK. *Migration Studies*, 7(2), 160–179.
- Targarona Rifa, N., Ryan, L., & Ciordia, A. (2025). Social categories and boundary-making: exploring the potential of interactive visual tools to study boundary work within personal networks. *Sociological Research Online*, 13607804251347267. <https://doi.org/10.1177/13607804251347267>
- Thomas, R. J., & Mark, N. P. (2013). Population size, network density, and the emergence of inherited inequality. *Social Forces*, 92(2), 521–544. <https://doi.org/10.1093/sf/sot080>
- Tilly, C. (2005). *Trust and rule*. Cambridge University Press.
- Tyldum, G., & Johnston, L. (2014). *Applying respondent driven sampling to migrant populations: Lessons from the field*. Palgrave Pivot. <https://doi.org/10.1057/9781137363619>
- Vacca, R., Cañarte, D., & Vitale, T. (2022). Beyond ethnic solidarity: The diversity and specialisation of social ties in a stigmatised migrant minority. *Journal of Ethnic and Migration Studies*, 48(13), 3113–3141. <https://doi.org/10.1080/1369183X.2021.1903305>
- Vallejo, J. A. (2012). Socially mobile Mexican Americans and the minority culture of mobility. *American Behavioral Scientist*, 56(5), 666–681.
- Verhaeghe, P.-P., Van der Bracht, K., & Van de Putte, B. (2015). Inequalities in social capital and their longitudinal effects on the labour market entry. *Social Networks*, 40, 174–184. <https://doi.org/10.1016/j.socnet.2014.10.001>
- Waldinger, R. (1996). *Still the promised city? African Americans and new immigrants in post-industrial New York*. Harvard University Press.
- Wegener, B. (1991). Job mobility and social ties: Social resources, prior job, and status attainment. *American Sociological Review*, 56(1), 60–71. <https://doi.org/10.2307/2095673>
- Wimmer, A., & Lewis, K. (2010). Beyond and below racial homophily: ERG models of a friendship network documented on Facebook. *American Journal of Sociology*, 116(2), 583–642. <https://doi.org/10.1086/653658>
- Windzio, M., & Bicer, E. (2013). Are we just friends? Immigrant integration into high- and low-cost social networks. *Rationality and Society*, 25(2), 123–145. <https://doi.org/10.1177/1043463113481219>