"I found myself staying" - A case study of the job embeddedness and retention of qualified health workers in rural and remote areas of Uganda

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“I found myself staying!”

A Case Study of the Job Embeddedness and Retention of Qualified Health Workers in Rural and Remote Areas of Uganda

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PhD 2015
“I found myself staying!”

A case study of the job embeddedness and retention of qualified health workers in rural and remote areas of Uganda

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A thesis submitted to the School of Postgraduate Studies, Faculty of Medicine and Health Sciences, Royal College of Surgeons in Ireland, in fulfilment of the degree of Doctor of Philosophy

Supervisors: Dr. Regien Biesma
Professor Steve Thomas
Dr. Niamh Humphries

March 2015
DECLARATION

I declare that this thesis, which I submit to RCSI for examination in consideration of the award of a higher degree Doctor of Philosophy (PhD) in HEALTH SYSTEMS RESEARCH, is my own personal effort. Where any of the content presented is the result of input or data from a related collaborative research programme this is duly acknowledged in the text such that it is possible to ascertain how much of the work is my own. I have not already obtained a degree in RCSI or elsewhere on the basis of this work. Furthermore, I took reasonable care to ensure that the work is original, and, to the best of my knowledge, does not breach copyright law, and has not been taken from other sources except where such work has been cited and acknowledged within the text.

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<tr>
<td>AAMC</td>
<td>Association of American Medical Colleges</td>
</tr>
<tr>
<td>AfDF</td>
<td>African Development Fund</td>
</tr>
<tr>
<td>AHEC</td>
<td>Area Health Education Centre</td>
</tr>
<tr>
<td>AHSPR</td>
<td>Annual Health Sector Performance Report</td>
</tr>
<tr>
<td>AIDS</td>
<td>Acquired Immunodeficiency Syndrome</td>
</tr>
<tr>
<td>ASGC-RA</td>
<td>Australian Standard Geographical Classification – Remoteness Areas</td>
</tr>
<tr>
<td>BMJ</td>
<td>British Medical Journal</td>
</tr>
<tr>
<td>CAQDAS</td>
<td>Computer-aided Qualitative Data Analysis Software</td>
</tr>
<tr>
<td>CD</td>
<td>Compressed Disc</td>
</tr>
<tr>
<td>CHRAIC</td>
<td>Connecting Health Research in Africa and Ireland Consortium</td>
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<tr>
<td>CME</td>
<td>Continuing Medical Education</td>
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<tr>
<td>CPD</td>
<td>Continuing Professional Development</td>
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<tr>
<td>CUAMM</td>
<td>Doctors with Africa CUAMM</td>
</tr>
<tr>
<td>DCE</td>
<td>Discrete Choice Experiment</td>
</tr>
<tr>
<td>DHO</td>
<td>District Health Officer</td>
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<tr>
<td>DLG</td>
<td>District Local Government</td>
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<tr>
<td>DLT</td>
<td>District League Table</td>
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<tr>
<td>DSC</td>
<td>District Service Commission</td>
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<tr>
<td>EAC</td>
<td>East African Community</td>
</tr>
<tr>
<td>ECSA</td>
<td>East, Central and Southern Africa</td>
</tr>
<tr>
<td>ECSA-HC</td>
<td>East, Central and Southern Africa Health Community</td>
</tr>
<tr>
<td>EMTALA</td>
<td>Emergency Medical Treatment and Labor Act</td>
</tr>
<tr>
<td>EN</td>
<td>Enrolled Nurse</td>
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<tr>
<td>FB</td>
<td>Facility-based</td>
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<tr>
<td>FBO</td>
<td>Faith-based Organisation</td>
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<tr>
<td>FIFO</td>
<td>Fly-in Fly-out</td>
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<td>Abbreviation</td>
<td>Description</td>
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<tr>
<td>FM</td>
<td>Frequency Modulation</td>
</tr>
<tr>
<td>FY</td>
<td>Financial Year</td>
</tr>
<tr>
<td>GHI</td>
<td>Global Health Initiative</td>
</tr>
<tr>
<td>GHWA</td>
<td>Global Health Workforce Alliance</td>
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<tr>
<td>GNI</td>
<td>Gross National Income</td>
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<td>GOU</td>
<td>Government of Uganda</td>
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<tr>
<td>GP</td>
<td>General Practice / General Practitioner</td>
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<td>HC I</td>
<td>Health Centre Level I</td>
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<td>HC II</td>
<td>Health Centre Level II</td>
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<td>HC III</td>
<td>Health Centre Level III</td>
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<tr>
<td>HC IV</td>
<td>Health Centre Level IV</td>
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<tr>
<td>HINARI</td>
<td>Health Internetwork for Access to Research Initiative</td>
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<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<tr>
<td>HPSA</td>
<td>Health Professional Shortage Areas</td>
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<tr>
<td>HPSR</td>
<td>Health Policy and Systems Research</td>
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<tr>
<td>HRH</td>
<td>Human Resources for Health</td>
</tr>
<tr>
<td>HSC</td>
<td>Health Service Commission</td>
</tr>
<tr>
<td>HSD</td>
<td>Health Sub-District</td>
</tr>
<tr>
<td>HSR</td>
<td>Health Systems Research</td>
</tr>
<tr>
<td>HSSIP</td>
<td>Health Sector Strategic and Investment Plan</td>
</tr>
<tr>
<td>HSSP</td>
<td>Health Sector Strategic Plan</td>
</tr>
<tr>
<td>HTI</td>
<td>Health Training Institution</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
</tr>
<tr>
<td>IDA</td>
<td>International Development Agency</td>
</tr>
<tr>
<td>IMG</td>
<td>International Medical Graduate</td>
</tr>
<tr>
<td>IMR</td>
<td>Infant Mortality Rate</td>
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<tr>
<td>JLI</td>
<td>Joint Learning Initiative</td>
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<tr>
<td>JRM</td>
<td>Joint Review Mission</td>
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<tr>
<td>KDAGA</td>
<td>Kampala Declaration and Agenda for Global Action</td>
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LEAB  Life Expectancy at Birth
MDG  Millennium Development Goal
MDGs  Millennium Development Goals
MEDIRESA  *Médecin Directeur de la Région Sanitaire*
MEPI  Medical Education Partnership Initiative
MMR  Maternal Mortality Ratio
MNCH  Maternal, Neonatal and Child Health
MOES  Ministry of Education and Sports
MOFPED  Ministry of Finance, Planning and Economic Development
MOH  Ministry of Health
MPH  Master of Public Health
MS  Medical Superintendent
MSOAP  Medical Specialist Outreach Assistance Program
NDP  National Development Plan
NGO  Non-governmental Organisation
NHP  National Health Policy
NRH  National Referral Hospital
NRM-O  National Resistance Movement Organisation
OCB  Organisational Citizenship Behaviour
OECD  Organisation for Economic Cooperation and Development
OOP  Out-of-pocket Expenditure
PC  Pharmacy Council
PE  Person-Environment
PEPFAR  U.S. President’s Emergency Plan for AIDS Relief
PFP  Private For-Profit
PHC  Primary Health Care
PHP  Private Health Providers
PNFP  Private Not-for-Profit
PPP  Purchasing Power parity
<table>
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<th>Acronym</th>
<th>Full Form</th>
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<tr>
<td>PPPH</td>
<td>Public-Private Partnership for Health</td>
</tr>
<tr>
<td>PSAP</td>
<td>Physician Shortage Areas Program</td>
</tr>
<tr>
<td>PSC</td>
<td>Public Service Commission</td>
</tr>
<tr>
<td>RCN</td>
<td>Registered Comprehensive Nurse</td>
</tr>
<tr>
<td>RCSII</td>
<td>Royal College of Surgeons in Ireland</td>
</tr>
<tr>
<td>REC</td>
<td>Research Ethics Committee</td>
</tr>
<tr>
<td>RM</td>
<td>Registered Midwife</td>
</tr>
<tr>
<td>RN</td>
<td>Registered Nurse</td>
</tr>
<tr>
<td>RNM</td>
<td>Registered Nurse-Midwife (&quot;Double-trained&quot;)</td>
</tr>
<tr>
<td>RRH</td>
<td>Regional Referral Hospital</td>
</tr>
<tr>
<td>RTT</td>
<td>Rural Training Track</td>
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<tr>
<td>SACCO</td>
<td>Savings and Credit Cooperative Organisation</td>
</tr>
<tr>
<td>SADC</td>
<td>Southern Africa Development Community</td>
</tr>
<tr>
<td>SDA</td>
<td>Seventh Day Adventist</td>
</tr>
<tr>
<td>SRAP</td>
<td>Southern Rural Access Program</td>
</tr>
<tr>
<td>SSA</td>
<td>Sub-Saharan Africa</td>
</tr>
<tr>
<td>STEM</td>
<td>Science, Technology, Engineering and Mathematics</td>
</tr>
<tr>
<td>SWAp</td>
<td>Sector-wide Approach</td>
</tr>
<tr>
<td>TCMP</td>
<td>Traditional and Complementary Medicine Practitioners</td>
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<tr>
<td>TFR</td>
<td>Total Fertility Rate</td>
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<td>TGE</td>
<td>Total Government Expenditure</td>
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<td>THE</td>
<td>Total Health Expenditure</td>
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<tr>
<td>TNA</td>
<td>Training Needs Assessment</td>
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<td>USMR</td>
<td>Under-5 Mortality Rate</td>
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<tr>
<td>UAHEB</td>
<td>Uganda Allied Health Examinations Board</td>
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<tr>
<td>UCMB</td>
<td>Uganda Catholic Medical Bureau</td>
</tr>
<tr>
<td>UHC</td>
<td>Universal Health Coverage</td>
</tr>
<tr>
<td>UMDPC</td>
<td>Uganda Medical and Dental Practitioners Council</td>
</tr>
<tr>
<td>UMMBB</td>
<td>Uganda Muslim Medical Bureau</td>
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UMU  Uganda Martyrs University
UNCST  Uganda National Council for Science and Technology
UNFPA  United Nations Population Fund
UNMC  Uganda Nurses and Midwives Council
UNMEB  Uganda Nurse and Midwives Examinations Board
UNMHC  Uganda National Minimum Health Care Package
UOMB  Uganda Orthodox Medical Bureau
UPE  Universal Primary Education
UPMB  Uganda Protestant Medical Bureau
USE  Universal Secondary Education
VHF  Very High Frequency
VHT  Village Health Team
VVF  Vesico-vaginal Fistula
WDR  World Development Report
WHO  World Health Organization
WISN  Workload-based Indicators of Staffing Need
WONCA  World Organisation of Family Doctors
WWAMI  Washington, Wyoming, Alaska, Montana, Idaho
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ABSTRACT
Global health worker maldistribution affects poor countries and rural areas most adversely, despite their high disease burden. Health workers reject rural areas due to isolation, and lack of facilities. Recommended extrinsic interventions to address rural-urban imbalance are costly and not sustainable in most developing countries. However, some health workers serve in rural areas without such interventions, suggesting existence of strong intrinsic motives for rural practice choice and retention, knowledge of which could be used to select retainable staff. This PhD research, a mixed-methods case study of 50 purposively-selected doctors and nurses retained in 12 Ugandan rural government and private general hospitals for three or more years, sought to find the reasons some qualified health workers get retained in rural areas, and the role of job embeddedness, a construct which predicts employee turnover, in their retention.

Rural practice choices were made for personal or altruistic reasons and in obedience to authorities. Rural integration and embeddedness depended upon social and pre-service technical preparation, leading to cultural competence, adaptability, self-efficacy and resilience to shocks. Retention depended on feeling satisfied with achievements or self-adjustment. Despite a modest average degree of rural job embeddedness, rural retention averaged 19 years and most participants did not intend to leave soon. Job embeddedness predicted the duration of retention but not intention to leave. The strongest dimensions of job embeddedness were “fit-organisation” and “fit-community”.

Prosocial behaviour and self-efficacy in rural practice influence rural practice choice and retention, and job embeddedness generally increases with retention. The study contributes the job embeddedness construct to the theory of health worker retention research. It also extends the use of the construct to mixed-methods studies, raises rural retention to the policy and research agendas and highlights the role of prosocial behaviour, self-efficacy and good managerial practices in rural practice choice and retention.
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DEDICATION

I dedicate this work to the virtues of Hope, Trust and Courage, perfectly exhibited in Denzel, Daphe St. Anne, Dagnija Donatrice de Paix, Agnes, Daphrose, Francis, Joseph and, most importantly, Ronah.
KEY OPERATIONAL DEFINITIONS

Nurses: Includes diploma- and degree-holding nurses: Registered Nurses (RN), Registered Midwives (RM), double-trained Registered Nurse-Midwives (RNM), Registered Comprehensive Nurses (RCN) and holders of a Bachelors degree in Nursing, irrespective of the level of appointment in the Public Service.

Doctors: Includes holders of a bachelors’ medical degree (Medicine & Surgery or Dental Surgery) with or without any other postgraduate qualification, irrespective of the level of appointment in the Public Service.

Rural or remote area: There is no uniform international definition of “rural” or “remote” because different countries use total population, population density, the physical infrastructure, distance from the nearest urban area (whose definition also differs significantly from country to country), or the time taken to reach an urban centre. In this study, “Rural area” or “Remote area” were used interchangeably or in combination to mean any location outside the Ugandan capital city, Kampala, and the 22 other towns which were gazetted as “municipalities” by the date of approval of the proposal for this study in 2013. The towns were: Arua, Busia, Bushenyi-Ishaka, Entebbe, Fort Portal, Gulu, Hoima, Iganga, Jinja, Kabale, Kasese, Lira, Masaka, Masindi, Mbale, Mbarara, Moroto, Mukono, Ntungamo, Rukungiri, Soroti and Tororo. This definition was used because these are the only approved large towns existent today, and which were large commercial centres even up to 40 years ago. The practical boundaries of each municipality include its commuting areas. Therefore, I avoided the entire district in which each municipality was located.

Retention in a rural area: Means “working in a rural location for longer than two completed years after qualification”. The definition of staff retention varies internationally from the length of time between commencement and termination of employment, to service beyond a reasonable minimum time served in that organisation, service or area [1-2]. Retention implies a degree of sufficiency or
adequacy of service, thus it is a measure of time served, whose interpretation varies from setting to setting and depends on the observer’s perspective [1-2]. In order to have tight definitions for inclusion or exclusion, I chose the two-year cut-off because it is the minimum duration of service required by the Uganda government to approve applications for study leave and for universities to admit health workers for postgraduate medical education. Moreover, it is also considered to be a “reasonable” period of service in other countries [1], thus enabling me to compare my results internationally.
1 INTRODUCTION

1.1 Introduction
Health workers are an indispensable building block of any functional health system [3-6]. They are essential to prevent disease, treat the sick, ease pain, mitigate disease risk, identify opportunities to generate and apply scientific innovations to improve health status, and to manage other health resources [7]. Studies have shown that health systems with higher numbers and quality of motivated health workers have better health outcomes, and that health outcomes are very sensitive to slight changes in staffing [5, 8-15]. Health care involves physical and emotional activities for which human beings may not be substituted fully with technology. Therefore, health workers are needed in terms of numbers and quality. This renders health care a labour-intensive industry, and labour consumes a large share of the health budget in most countries [5, 7, 11, 16-17]. However, health workers are in short supply, with an estimated global shortage of 7.2 million in 2008 [18]. They are inequitably distributed, with Africa having only 3% of the workforce despite having 24% of the world’s disease burden while the Americas have 37% of the health workforce despite having only 10% of the disease burden [5]. Health workers under-perform and are demotivated due to work overload, stress, burnout, sickness, poor management, poor remuneration, poor equipment and lack of supervision, among others [5, 7].

The situation described above is a global crisis in Human Resources for Health (HRH), compounded by the fact that solutions adopted by some countries cause problems for others. One of the biggest of such problems is poor retention of qualified health workers in rural and remote areas of developing countries like Uganda [19]. In Uganda, the only available national data on geographic distribution of health workers showed that in 2002, while rural areas had over 80% of the population, the more urbanised central region, with 27% of the population, had 81% of the pharmacists, 74% of the dentists, 73% of the doctors and 65% of the
nurses [20]. A more recent related study showed that the national average of approved positions in Uganda’s health facilities filled with qualified health workers is only 56%, with some urban facilities having over 100% staffing while some rural facilities have less than 30% [21]. Rural-urban imbalance in distribution of health workers leads to a vicious cycle, with rural health workers overworked, demotivated and stressed, all of which may lead to high staff turnover and poor health outcomes for rural residents [22-23].

To date, most research and policy interventions to improve access to qualified health workers in rural areas of developing countries has been focused on recruitment, inevitably resulting in either compulsory or incentivising measures. However, most of the incentivising measures are financial or require heavy and long-term financial investments, which are not affordable or not sustainable in the long-term for developing countries. Despite these measures, rural staff retention remains low in both developing and developed countries, and research and interventions focused on retention remain few and far between, especially in developing countries [24-28]. Nevertheless, there are some health workers who have stayed in rural areas for long, and some of them were neither attracted with incentives nor compelled to stay. It is unclear why some health workers remain in rural and remote areas, even without incentives or compulsion, while others do not. Understanding this phenomenon could hold part of the answer to improving access to qualified health workers in rural areas and offer a low-cost solution affordable to developing countries.

The job embeddedness construct [29] reliably predicts the likelihood of employee turnover from organisations and is, by extrapolation, a useful predictor of staff retention. Employees who are embedded in their jobs are more likely to be retained than those who are not [30-32]. The construct identifies on-the-job and off-the-job factors (links, fit and sacrifice) that make employees enmeshed and embedded in their jobs and unable to move to others. It provides a broad and comprehensive theoretical perspective to interrogate the complex phenomenon of
staff retention. However, to date, it has neither been used to predict turnover from locations nor been widely used in health research. It could also be useful in predicting the turnover of qualified health workers from (and, hence, retention in) rural areas. Using a mixed-methods case study approach, this study examined the factors that affect the retention of qualified health workers in rural and remote areas of Uganda from a perspective of job embeddedness. It set out to investigate the reasons (other than financial incentives or compulsion) that health workers are retained in rural areas, and to examine the role of job embeddedness in rural retention of health workers.

1.2 Research question and objectives
The main research question was “Why do some qualified health workers become retained in rural areas of developing countries? A subsidiary question was “What is the role of job embeddedness in retention of health workers in rural areas?”

The objectives of the study were:

1. To identify the factors that initially attracted the retained health workers to rural areas in Uganda
2. To understand the job embeddedness of health workers retained in rural areas in Uganda
3. To identify the factors that retained the qualified health workers in rural areas in Uganda
4. To understand the role played by job embeddedness in the retention of qualified health workers in rural areas of Uganda.

The retention of qualified health workers in rural areas is a matter of interest to many stakeholders as it has legal, economic, financial, public health, political, social, demographic, moral and ethical implications. To rural residents, access to a qualified health worker at times makes the difference between life and death. It also influences their household expenditure on health care, especially where they depend on out-of-pocket (OOP) expenditure. To the government, it is a reflection of
commitment to the national constitution, which guarantees the right to access to
good quality health care for all, and compliance with related international
conventions. In addition, it makes economic sense for developing countries to
ensure that rural residents access good quality care because they are the majority
and, once healthy and productive, they are more likely to make a full contribution
to the national economy, as well as saving resources that would be spent on
treating them. Once they access good quality services, rural residents can also
support government programmes and enhance national socio-economic
development. Demographically, ensuring access to good quality health services in
rural areas also prevents rural-urban migration in search of better services, which
strains urban services and has multiple other consequences.

This PhD makes a three-fold contribution i.e. knowledge, policy and methodology to
research and understand rural retention of health workers, and how rural-urban
imbalance in their distribution can be redressed. In terms of knowledge, it reaffirms
some of the available knowledge on factors that lead to rural practice by health
workers and expands on it by identifying intrinsic non-incentive reasons for rural
practice choice and retention, which can be affordable for developing countries. It
introduces the job embeddedness construct to the theory of health policy and
systems research on health worker retention in developing countries. It raises
further attention to the problem of rural retention of health workers, and shows
how job embeddedness can help to identify areas where managers and policy-
makers can act to improve retention. It focuses on retention of health workers in
rural areas, where other research focuses on recruitment or reasons for leaving. It
contributes further by providing a perspective of the retained health workers,
where other research focuses on the perspectives of policy-makers. In terms of
methodology, it pioneers the mixing of both qualitative and quantitative methods
in the use of the job embeddedness construct. In terms of policy, it proffers
practical definitions for “rural” and “retention”, at least for Uganda, where none
existed. It also identifies cost-effective approaches that can be used to identify
“retainable” staff and simple interventions based on the domains of the job embeddedness construct on which managers and policy makers can act to increase staff embeddedness and retention.

The thesis is presented in nine chapters, organised around the context of the study in terms of the global crisis in human resources for health, interventions to increase the retention of health workers in rural areas, Uganda’s health system, and the theoretical framework (chapters 1-4); the methodology (chapter 5); the findings (chapters 6-8); and the discussion and conclusion (chapter 9).

1.3 Introducing the researcher
I am medical doctor (MBChB) by qualification and hold a Masters degree in Public Health (MPH) both obtained from Makerere University, Kampala, (MUK), in Uganda. I was born and raised in a remote rural area of south-western Uganda, 12 km from the nearest hospital and 50 km from the nearest government hospital. I grew up under the influence of strong Christian teaching (seven years in an Anglican primary school and six in a Roman Catholic minor seminary). Though I matured in a secular government university, my earlier upbringing heavily influences my worldview. At medical school, one question that became familiar to all students of my time, and which everybody had to be prepared to answer during clinical examinations, was: “...And how would you manage this patient if you were in ...?” The hospitals always cited were Bundibugyo, Abim, Atutur, Kagadi, Kambuga, Kitagata and Kisoro because they were in some of the remotest parts of Uganda, at the time. This question forced us to learn case management in ideal and less-than-ideal environments that required innovative improvisation. It also made me curious about those places.

After my internship, I was posted to Kitagata Hospital but I specifically requested for Kisoro, which was nearer to my home. Ironically, there I found an excellent missionary hospital, St. Francis Hospital, Mutolere, with some of the best facilities and the most committed health workers and managers I had met at the time. For three years, I worked at the very frontline of health care, experiencing very heavy
workload but which was also very rewarding in terms of patient outcomes. The location was very remote and difficult to access. We got supplies from Kampala, two days away by hospital lorry. The nearest Ugandan hospital was 80 km away and lacked facilities and staff. Many patients with serious illness from that region and the neighbouring areas of Rwanda and the Democratic Republic of Congo (DRC) came to Mutolere, which is located at the tri-country junction. Due to water shortage and volcanic rocks, hygiene practices were poor and we got predictable outbreaks of dysentery every year, with very high case-fatality rates. I investigated the outbreaks, ran outreach services and manually wrote reports to the Ministry of Health, asking for intervention. Whenever support delayed, we had to smuggle medicine in from the DRC. A combination of all these experiences led me away from my initial wish to study Obstetrics and Gynaecology to study Public Health.

For one year during the MPH course, I was attached to the north-western Arua District, only accessible by air then due to a civil war. Rebels in a simultaneous local secessionist civil war abducted health workers and laid landmines on the roads. From a well-equipped missionary hospital, with highly motivated staff, I now had to supervise poorly-equipped, demoralised and scared government health workers. The experience made me empathise with health workers in rural and remote areas. After MPH, I worked as a Technical Assistant to the Regional Medical Officer (MEDIRESA) of Umutara region in Rwanda, a game park newly de-gazetted to resettle returning refugees, where I also trained local health workers and their supervisors for four years. Through supervisory visits and training sessions, I learnt firsthand the technical, physical and social challenges they faced. With project funds, I built a health centre in a very remote area and set up the first telemedicine system in that region using a VHF (very high frequency) radio communication system, before mobile phones reached the country.

With this innovation, remote health workers could call specialists at district hospitals to obtain real-time support in case management, or call for ambulances and supplies. The sum of these exposures further strengthened my commitment to
improve not only access to good quality care by rural residents, but also the working conditions of health workers in rural and remote areas. After Rwanda, I have taught at Uganda Martyrs University and maintained my focus on quality of care in rural areas, from both the demand side and the supply side. I have conducted and supervised a couple of studies on the issue and this experience spurred me on to pursue my PhD on this topic. Therefore, this PhD is a culmination of personal and professional experiences that resulted into both practical and idealistic zeal to improve social justice by ensuring universal access to good quality health care, including by rural residents. The next section describes Uganda’s health system, the context within which this study was conducted.

1.4 Uganda’s health system
This section describes Uganda’s health system and its national context, with a focus on issues relevant to human resources for health.

1.4.1 Geographical, political and demographic features
Uganda is a country in East Africa, with an area of 200,523.2 km², a population of 34.9 million people growing at a rate of 3.03% per annum and a population density of 174 per km² [33]. The population is young, with 56.7% being below the legal adulthood age of 18 years and only 4.2% being 60 years (the legal retirement age) or more, [33]. Uganda lies astride the Equator, at an average altitude of 3000 metres (about 10,000 ft) above sea level (ranging between 600 – 5000 m). It has a warm, tropical climate with an average temperature of 20⁰ C, with most of the country having two rainy seasons and two dry seasons, conditions also favourable for most tropical communicable diseases. More than 80% of the population is rural and engaged in subsistence agriculture. It forms part of the Great Lakes region of Africa, bordering South Sudan in the north, The Democratic Republic of Congo (DRC) in the west, Rwanda in the southwest, Tanzania in the south and Kenya in the east, which (apart from South Sudan and DRC) form the regional bloc, the East African Community (EAC) (see map in Appendix 1, page 323). It is landlocked to the
sea and relies on rail and road routes through Kenya and Tanzania. Uganda got independence from Britain in 1962. It is divided into 112 districts. Political and technical functions are decentralised to district level. Districts collect little local revenue and survive on financial allocations from the central government. It operates a unicameral parliament, a multiparty political system, and a presidential system, with general elections held every five years. The current ruling party, the National Resistance Movement Organisation (NRM-O), assumed power 28 years ago after a 5-year guerrilla war. Several civil wars, and a previous international war against Tanzania, devastated the country and led to significant geographical disparities in socio-economic status, health infrastructure and health status indicators, the worst being in the war-ravaged areas.

### 1.4.2 Socio-economic and health status indicators

The Gross National Income (GNI) of Uganda is US $1370 PPP per capita per annum. Life Expectancy at Birth (LEAB) is 54 years, with an Infant Mortality Rate (IMR) of 54/1000 live births, Under-5 Mortality Rate (U5MR) of 90/1000 live births, Total Fertility Rate (TFR) of 6.8 children per woman and Maternal Mortality Ratio (MMR) of 438/100,000 live births [34]. The leading causes of morbidity and mortality are preventable communicable diseases, especially malaria among the children and HIV/AIDS among the adults. However, there are huge disparities in health status indicators, with the northern part having the worst because it is just recovering from a 20-year civil war. Government expenditure on health is low, at only US $12.7 per capita per annum. The health sector receives only 7.4% of the Total Government Expenditure (TGE) [35], way below the Abuja target of 15%\(^1\) [36-37]. Most of the Total Health Expenditure (THE) in Uganda (49% in 2009/10) comes from private sources, with the government contributing only 15% and donors contributing 36%\(^2\) [38]. External funding for the health sector is through three main

---

1. A commitment by African heads of state meeting in Abuja (Nigeria) in 2001, to increase funding for health to at least 15% of the national budget
2. The top 5 donors in 2012, in order: USA, IDA, the EU, UK, AfDF
approaches: general budget support to the government, sector-wide approach (SWAp) directly to the health sector, and donor projects. Most (88%) of the private funding for health comes from households as out-of-pocket (OOP) expenditure.

1.4.3 Structure, policy and performance management

Uganda’s health care system comprises of services offered by the government (public), and the private health care sectors. The private sector comprises of private not-for-profit (PNFP) providers which are mainly faith-based organisations (FBO)\(^3\), private health providers (PHP)\(^4\), and the traditional and complementary medicine practitioners (TCMP)\(^5\). PNFPs are mostly located in the remotest parts where the government does not have any facilities [39]. PHPs mainly belong to individual practitioners and are in urban centres. PNFPs produce about 50% of the reported health care outputs annually [40]. The remaining 50% is ascribed to government health facilities because the output of PHPs is not captured. The national health system is divided into 112 District Health Systems. In terms of structure, the health care system has seven levels as shown in Table 1.1.

Only 72% of the population live within 5 km of a health facility. Although both access and utilisation of the services have increased over the years, utilisation is still low, at just 1.1 outpatient visits per capita per year [35], much lower than that in many developed countries, e.g. 14.5 in South Korea and 3.9 in Ireland [41]. The Health System is organised in three tiers: the central, district and Health Sub-District (HSD) levels. Under the government’s policy of decentralisation, service delivery is devolved to HSD level, supervision to district level while the centre does stewardship, policy-making, financing and setting of standards. There are 214 HSDs, equivalent to a county and headquartered at a general hospital or HC IV in the area, irrespective of ownership.

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\(^3\) In general policy language, “public” refers to facilities owned and managed by the government. Therefore, although FBOs do not belong to individuals, they are not regarded as “public”.

\(^4\) These would be “private for-profit” but they rejected the term, insisting that their primary motive is independence from government, rather than profit.

\(^5\) These comprise of herbalists, spiritualists and users of other cures e.g. Chinese or Indian
Table 1.1 The structure and ownership of Uganda’s Health Care System

NB: * The Regions are not administrative. They are virtual, based on population. * One hospital may serve several districts if they have a small population. * One National Referral Hospital generally focuses on Mental Health. ** PNFP and Private (PFP) hospitals do not grade their hospitals by level, but they are understood to be general hospitals, although four qualify to be National Referral Hospitals and one qualifies to be a Regional Referral Hospital. *** The Village Health Team (VHT) is not a physical facility. It is a team of community-selected health mobilisers/animators. **** Although 75% of the districts have VHTs, only 31% have complete district coverage. Source: Annual Health Sector Performance Report 2012/2013; and HSSIP 2010/11-2014/15

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>National Referral Hospital</td>
<td>National</td>
<td>2*</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Regional Referral Hospital</td>
<td>Region</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>General Hospital</td>
<td>District(s)</td>
<td>50</td>
<td>9</td>
</tr>
<tr>
<td>4</td>
<td>Health Centre IV (HC IV)</td>
<td>County</td>
<td>164</td>
<td>177</td>
</tr>
<tr>
<td>5</td>
<td>Health Centre III (HC III)</td>
<td>Sub-county</td>
<td>832</td>
<td>1082</td>
</tr>
<tr>
<td>6</td>
<td>Health Centre II (HC II)</td>
<td>Parish</td>
<td>1562</td>
<td>3006</td>
</tr>
<tr>
<td>7</td>
<td>Health Centre I (VHT)***</td>
<td>Village</td>
<td>1:1,000 or 1 per 25 HHs</td>
<td>31%****</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>2622</td>
<td>4394</td>
</tr>
</tbody>
</table>

The primary mission of the health system is to ensure access to the Uganda National Minimum Health Care Package (UNMHCP) for all residents of Uganda [39]. The UNMHCP is graduated into Activity Packages for different facility levels, which get more complex higher in the system. From Health Centre IV upwards, all facilities should have doctors and offer in-patient services, emergency surgery and blood transfusion. Lower level health units provide mainly outpatient services but may admit a few patients for short observation and management and are staffed by Clinical Officers and nurses/midwives.

Currently, Uganda operates under its second 10-year National Health Policy (NHP) [42], which is influenced by the Primary Health Care (PHC) strategy [43]. The government operationalises the NHP through five-year Health Sector Strategic and Investment Plans (HSSIP) [39]. A body of key technical stakeholders called the Health Policy Advisory Committee (HPAC) mainly made of donors advises the Ministry of Health on priorities and key policy issues. To monitor the implementation of the HSSIP, the government produces the Annual Health Sector
Performance Report (AHSPR) [35] giving progress on key indicators agreed upon the previous year in the annual Joint Review Mission (JRM), a national level multi-stakeholder meeting between the national and district levels with the participation of donors. To compare and spur the performance of districts, the AHSPR contains a District League Table (DLT). Improved and best-performer districts receive awards [44] while poor performers are discussed. The number of approved positions of qualified health workers actually filled in each district is one of the key indicators in the DLT.

1.4.4 Health workforce issues

1.4.4.1 Availability and distribution
The health sector is one of the largest employers of government workers. Government health services employ 35,903 qualified health workers [35], while PNFP services employ a further 13,036 [45]. An estimated 10,000 others work in the private sector (the number is difficult to establish accurately due to dual practice and the non-collection of data from the private sector). In 2006, the WHO found that Uganda was one of the 57 countries in the world (of which 36 are in sub-Saharan Africa) that had a health worker-to-population density lower than the minimum of 2.3/1000 required to meet the health-related Millennium Development Goals (MDGs) [5]. For example, while, as long ago as 1993, the World Bank proposed that the density of physicians should be at least 0.1 - 0.2/1000 population [46], Uganda’s physician density in 2006 was 0.08/1000, 0.61 for nurses, 0.12 for midwives, 0.01 for dentists and 0.03 for pharmacists [5]. Even though 2015 is ten years after the 2006 WHO report and the target year for attainment of the MDGs, an analysis of the current staffing figures shown above suggests that the total health workforce density is only 1.68/1000 population. Yet, the problem is not just in numbers. The skill-mix of the health workers is also poor.

The doctor:nurse ratio, one key measure of skill mix, shows that the picture in Uganda is bad. The World Development Report (WDR) cited above [46] advised that even if there is no optimal global nurse-to-physician ratio due to differences in
health care traditions, nurses should exceed physicians by between, at least, two and four graduate nurses to one physician [46]. Ideally, this should be the worst-case scenario. However, whereas by 1993, the nurse:doctor ratio in Sub-Saharan Africa was 5:1 and in Uganda 8.4:1 [46], by 2009, the Uganda ratio had changed to 10.9:1 [47]. A high nurse:doctor ratio like this most likely indicates a severe shortage of doctors than a high availability of nurses. Currently, qualified health workers, especially doctors and registered nurses, emigrate to countries with better salary levels (especially UK, USA, South Africa, Botswana, Namibia, Rwanda and South Sudan) [48]. This is not a new problem and it has been ongoing for some time due to both political and economic problems [49-52]. A 2006 report showed that Uganda was the 22nd worst-affected African country, with 43% of its registered physicians and 10% of nurses working abroad [53]. At one point, the government encouraged health worker emigration in the hope of receiving remittances from abroad until it became clear that there was no evidence of remittances coming from health workers, and that local need for health workers was also getting worse [54].

1.4.4.2 Training
The health professional education sector of Uganda is vibrant, with 126 registered health professional training schools in 2014, as shown in Table 1.2. The schools train staff of various cadres and have a combined capacity of at least 40,000 students, with a combined average annual output of 350 undergraduate doctors, dentists and pharmacists; 6,000 nurses/midwives and 2,500 assorted Allied Health Professionals. Some of the schools are stand-alone institutions while others are part of university faculties. The government owns 33.3% of all the Health Training Institutions although the private not-for-profit (PNFP) sector dominates nurse training. Government schools have 70% of the students because of higher intake capacity. They also dominate the production of degree-level graduates and allied health professionals. There are no data available on the demographic profiles of Uganda’s health workers. However, for purposes of gender balancing, the government has,
for the last 25 years, had a policy of affirmative action to increase the enrolment of women into university courses to increase the number of female university graduates. This has significantly increased the number of women entering medical and nursing schools [55].

Table 1.2 Health training institutions in Uganda, 2012

<table>
<thead>
<tr>
<th>Ownership</th>
<th>Doctors, Dentists &amp; Pharmacists</th>
<th>Nurses &amp; Midwives</th>
<th>Allied Health Professionals</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government</td>
<td>3</td>
<td>16</td>
<td>23</td>
<td>42</td>
<td>33.3%</td>
</tr>
<tr>
<td>PNFP</td>
<td>2</td>
<td>32</td>
<td>10</td>
<td>44</td>
<td>34.9%</td>
</tr>
<tr>
<td>PHP</td>
<td>2</td>
<td>25</td>
<td>13</td>
<td>40</td>
<td>31.8%</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>73</td>
<td>46</td>
<td>126</td>
<td></td>
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Data source: Uganda Nurses and Midwives Examinations Board (UNMEB), Uganda Allied Health Examinations Board (UAHEB), Uganda Medical & Dental Practitioners Council (UMDPC), Pharmacy Council (PC)

Government health facilities are understaffed while the other sectors use less-qualified staff as a coping mechanism [56-57]. There is severe attrition of staff from the PNFPs, with most of them going to government facilities for better salary, less workload and less-stringent supervision [45, 58-59]. Although for-profit facilities do not report their staffing picture, it is expected to be worse than that reported in government and PNFP services. However, despite reported widespread unemployment of qualified health workers, there is poor response to recruitment drives, especially in rural areas, due to poor salaries\(^6\). Regulation of training institutions is done by the Ministry of Education and Sports (MOES) while registration, accreditation of qualifications, licensing of practitioners and premises is done by semi-independent professional councils.

1.4.4.3 Human Resources Management functions

Government staff is managed by the Ministry of Public Service (MOPS), which sets the working conditions and remuneration levels, manages the wage bill and payroll, pays the pension, and sets the ground rules of day-to-day work, among others. It

\(^6\) A non-specialist hospital doctor gets about €300 per month. A Registered Nurse gets about €150.
has a Public Service Commission (PSC) as its specialised department responsible for recruitment, appraisal and promotion of staff. However, a few sectors, like health, have similar Commissions specific for those sectors, e.g. the Health Service Commission (HSC) [60-62]. At district level, District Service Commissions (DSCs) handle all the HRM functions on behalf of the PSC. The HSC advises the DSCs on the technical requirements for the recruitment of health workers [63]. Due to financial constraints, the Ministry of Finance, Planning and Economic Development (MOFPED), allows recruitment only whenever funds become available, usually about once every three to five years. Health workers in the districts are employees of the DSCs while those working at central level and higher referral hospitals are recruited and overseen by the HSC [62]. In the mostly rural PNFP health facilities, managers advertise their vacancies in any way affordable, such as print and electronic media, or direct recruitment through head-hunting.

1.4.4.4 Distribution of the health workforce
The geographical distribution of health workers in the country is poor. There are no recent official reports showing the true rural-urban distribution of health workers, but a 2005 sub-analysis of the 2002 Population and Housing Census revealed that whereas over 80% of the population lives in rural areas, the rich and highly-urbanised central region (especially the capital, Kampala, and the surrounding towns like Mukono, Jinja, Mityana, Masaka and Entebbe, with 27% of the population) had 81% of the pharmacists, 74% of the dentists, 73% of the doctors and 65% of the nurses, and some districts did not have a single doctor on census night\(^7\), despite having large health care institutions [20].

In the Financial Year (FY) 1999/2000, the average proportion of approved positions in government facilities filled was 33%, rising to 42% in 2001/2002 following massive recruitment [49], to 68% in 2004/5 and peaking at 75% in 2005/6 [64].

\(^7\) *Census night* is a statistical concept referring to the night before the day on which the census begins. Given that the population census is a big exercise that cannot be completed in one day, a specific night is selected to be the point of reference for the validity of the data and questions asked refer to that night.
However, the latest Human Resources for Health Audit (2010) revealed that it was only 56% [21] and is currently reported to be 63% after another massive recruitment [35]. Although most urban facilities are over-staffed, rural ones are under-staffed [21]. Since most urban facilities are hospitals, offering curative care, geographical imbalance combines with a preference for hospital work making the distribution worse for rural lower level facilities, which serve the majority of the population and provide preventive services. Despite the lack of recent national official data analysing the rural-urban imbalance in distribution of health workers, Lemière et al demonstrate that, in a recent study of 13 selected sub-Saharan African countries, Uganda has the most inequitable distribution [65].

The government has made several but inconsistent efforts to improve the staffing situation in the country. In the late 1980s and early 1990s, it used to deny health workers passports, in the fear that they would migrate. Later, it started using financial incentives to retain health workers within the country, initially through the introduction of Professional Allowances and, later, a Lunch Allowance [66-67]. This caused unrest among the other civil servants because it benefited health workers only. Subsequently, the government reformed the entire payroll structure by introducing the Single-Spine Salary Structure, which gave uniform payment across similar scales but abandoned it [68]. It made several salary raises over the subsequent years [67]. However, they were so large and frequent that the PNFP sector could not cope with them. This created a disparity in pay levels between the two sectors and led to massive health worker attrition from PNFPs to the government that still continues [58-59, 69]. The government has tried to assist the PNFPs through secondment of fully-paid staff although there are no clear guidelines for the secondment and it, occasionally, causes problems to the recipient hospitals [70-71]. Nevertheless, it is always a big relief for the individual hospitals.

In 2010, the government made a 30% salary increase specifically for all government employees working in rural areas, as a “Hardship Allowance” [72]. In 2013, the government planned to make it compulsory for doctors to work in rural areas
before being registered as qualified practitioners, but this was not implemented [73]. Instead, it recruited 7,211 new health workers from within the country [74] and introduced a new salary level specifically for doctors working at HC IVs, the so-called “Retention Allowance”. However, the retention of the new recruits is not good [75]. Given the long delays between graduation and government recruitment, health workers, especially doctors and nurses, look for jobs in the private sector or emigrate. However, there are no reliable data on internal or external migration of Uganda’s health workers. In addition, there are no data on retention or location. The only potential sources of data that could provide that information are payroll sources but they are not accessible to the public and they cover only government staff. The HRH Audit report only covers government facilities. There is no national database that could provide consolidated data covering the entire health sector. With donor support, a Human Resources for Health Information System (HRIS) was established recently to maintain health worker records and track their whereabouts [76], but it covers only government workers. Key observations on retention interventions include the fact that they lack implementation guidelines, and monitoring and evaluation plans. In addition, unlike the recommendations from WHO on implementation of bundled interventions for synergy and maximum effectiveness [77], most of the interventions in Uganda are implemented singly, thus reducing their potential effectiveness.

1.5 Conclusion
The preceding has described Uganda and its health system as the context for this study. It has highlighted the problem of under-investment in the health sector partly due to low national income but also due to failure to prioritise health. It has presented the current structure and performance monitoring of the health system. It has dwelt more on human resources for health issues, illustrating the magnitude of the overall shortage of staff, the internal distributional imbalances, and the factors that affect them. The next chapter discusses the literature on the global human resources for health crisis.
2 THE HUMAN RESOURCES FOR HEALTH CRISIS

2.1 Introduction
This chapter consists of a review of the literature on the crisis in human resources for health (HRH), focusing on the urban-rural imbalance component of the crisis. I look at rural-urban imbalance of health worker distribution as one of the defining characteristics of the crisis. The crisis is both a cause and an effect of rural-urban imbalance in the distribution of health workers. Therefore, it is the context in which the imbalance occurs. If developed countries did not have a HRH crisis of their own, they would not need to import health workers from developing countries, thus precipitating migration of large numbers of health workers. However, if developing countries were producing enough health workers, and distributing them appropriately, they would not be negatively affected by those who exercise their right to migrate. There would be no shortage in rural areas caused by those who choose to live and work in urban areas. Therefore, the crisis is multi-pronged and double-edged. The aim of this chapter is to describe the causative mechanisms of the human resource crisis in some detail and some efforts that have taken place to address it. It begins by placing the crisis in a wider context of a global health crisis. Then, it looks at the causes, effects and some solutions. The bulk of the solutions, though, is described in the next chapter on interventions. I start by describing the search strategy that I used to obtain the literature.

2.2 Literature search and review strategies
My overall strategy was to do a narrative literature review, because this was an exploratory study, looking at the topic from the unfamiliar perspective of health workers retained in rural areas of developing countries. This being a new area, there are not many published “best practice” papers. For example, a 2009 systematic review by Grobler et al. [28] found no published randomised controlled trials of interventions to retain health workers, a situation that persists to date. However, there were several papers on observational studies already published on the topic. Therefore, this study being exploratory, I opted for a narrative review due
to its more relaxed inclusion criteria, in order to widen my pool of resources. Moreover, being a PhD, with multiple and different components, I needed literature dealing with many issues ranging from context, philosophy, methodology, theory etc. Therefore, I used different approaches to obtain, review and synthesise the literature on each of those components.

My first strategy was to set up alerts on journal websites, Google and publisher websites e.g. ScienceDirect. Over the period of the course, from 2010, I received early information about the publication of relevant papers, which I later traced and reviewed. My second strategy was to use different combinations of search terms for the search strategies on the different topics. I searched for literature from the following search engines and bibliographic databases from the earliest available date to December 2014: PubMed, OvidSP, Embase, CINAHL, The Cochrane Library, PsycINFO, ScienceDirect, Web of Science, John Wiley, AJOL, POPLINE, JSTOR, Population Index, Annual Reviews, EBSCOHost and multiple institutional databases, web pages and web portals. I searched over a long period because of a shortage of literature on job embeddedness. For example, a search for published literature on “job embeddedness” on PubMed revealed only 23 papers but none of them referred to retention in rural jobs. Moreover, most of the published literature is from developed countries, especially the USA and Australia. For example, of the 23 studies mentioned here, 21 were from the USA, and one each from China and Australia. Therefore, I widened the sources to include other sources.

I searched for literature primarily in the English language, supplemented with English abstracts of papers in other languages e.g. French, Spanish, Portuguese and Italian, whenever they were available. To focus my search, I combined search terms using the following Boolean operators: “AND”, “OR”, and the quotation (“ “) marks around several words to form a specific phrase e.g. “financial incentive”. I used brackets to group together several words describing a common concept if I wanted to combine it with another e.g. (rural OR underserved) AND (retention OR retain). To search for all words related to a common term, I used wildcards, especially the
asterisk (*). For example, “retain*”, would give me all documents with “retain”, “retains”, “retaining”, “retained”, “retainer” etc. I applied MeSH terms for databases which used them. I used basic searches for a broad search and advanced searches to narrow down the searches. Each issue had several concepts in it and I used various terms from different databases. The search terms I used on the issue of the crisis of human resources for health alone, were as included in Table 0.1 (in Appendix 2, page 324), accompanied by an example of my search.

I kept doing permutations of words in the groups of terms until I exhausted my list. I then reviewed the selected papers starting with the titles. For those whose titles appeared relevant to the topic, I proceeded to review their abstracts, and for those whose abstracts I confirmed to be focused on the topic of interest, I proceeded to download them or look for other means of obtaining them. Once I obtained the full papers, I reviewed the full text and retained those which were relevant to the study, and dropped those which were not. For example, in the sample mentioned above, I found only 12 papers on PubMed that I needed to follow up further. Generally speaking, I was able to obtain full texts of most of the documents that I had selected, thanks to support through HINARI, Uganda Martyrs University Library’s Online Journals service and the RCSI Library’s e-journals service. In the few cases where I failed to obtain the documents, I contacted the authors directly and received several documents from two authors. I found difficulties with accessing books, though, because most of them are not online. Therefore, my literature is largely dependent on published papers, rather than on books. Where the databases did not yield much literature, especially for institutional reports, I used search engines. I used Google and Google Scholar to retrieve most published literature from scientific sources and unpublished literature from organisational and governmental web portals and web-pages. For example, a search on Google Scholar for “job embeddedness” revealed 2880 papers. However, on focusing the search terms to include “retention”, the results narrowed down to 1600 papers. Focusing further with “rural” reduced the papers to 267 papers. By focusing further to
“developing countries”, the papers reduced to 43 and I reviewed their titles. I kept doing this permutation of search terms until I got adequate literature from the little that was relevant to this study. Only 6 of the papers were on health workers. The rest were from other business fields, especially hospitality management, academic faculty and retention of military personnel. Nevertheless, I reviewed all to obtain the essential principles.

2.3 Characterising the HRH crisis

Inadequate and inappropriate distribution of the health workforce is an age-old problem, but only rose high on the policy agenda and was acknowledged to have reached crisis proportions in the late 20th century [7]. The crisis in human resources for health is not a stand-alone situation, as it is just one component of a wider global health crisis. For a start, the global health crisis is characterised by rising death rates, reducing life expectancy and global pandemics arising from mass poverty, uneven economic growth and political instability [7] p.1. Within the global health crisis, health workers are at the interface, trying their best to save lives. However, they are too few, poorly distributed, overwhelmed by the workload, poorly equipped, lacking the necessary supplies, poorly paid, at risk of infections, lacking the necessary support, poorly managed and, as a result of all these, demoralised, stressed, burnt out and underperforming. This constitutes the crisis for human resources for health, a crisis within a crisis [7]. In summary:

“Mirroring today’s global health crisis, we face a global crisis of the health workforce. There are not enough health workers, they do not have the right skills and support networks, they are overstretched and overstressed, and often they are not in the right place” [7] p.18.

By not being “in the right place” is meant not being where the need actually exists. Ideally, countries and areas with the biggest disease burden should have the highest access to health workers. However, this is not the case. Instead, we have a situation whereby care is more available where it is less needed and less available
where it is more needed, or Hart’s Inverse Care Law [78]. The global shortage of
health workers now stands at over 8 million workers [18]. Shortage introduces
competition between the health systems for the few health workers available, with
the result that the weak systems and poor areas lose out, hence the inequitable
distribution. In 2006, the World Health Organization (WHO) reported that the
region of the Americas, with 10% of the global burden of disease, had 37% of the
world’s health workforce and consumed 50% of the world’s expenditure on health,
while the African region, with 24% of the global burden of disease, had only 3% of
the world’s workforce and consumed less than 1% of the world’s health
expenditure [5].

While the HRH crisis is global, the worst hit countries are those with the weakest
economies and health systems. According to the Joint Learning Initiative (JLI), a
network of health leaders from all over the world set up to study the HRH problem
in the developing world, in 2004, the worst hit countries were in Sub-Saharan
Africa, Latin America and Asia [7]. They had health worker densities of less than 2.5
health workers per 1000 people, a threshold that the JLI deemed to be the
minimum necessary in order to attain and sustain measles immunisation coverage
of 80% and above and to access sufficient numbers of skilled birth attendants, to be
able to meet the Millennium Development Goal (MDG) targets on child and
maternal health [7]. In 2006, the WHO reported that all the 57 countries with
health personnel levels below the threshold necessary to attain the MDGs were
developing countries and 36 of them were in Sub-Saharan Africa [5]. Africa, with
10% of the world’s population and 25% of the world’s disease burden, has only 3%
of the world’s workforce and an average workforce density of 0.8 health workers
per 1000 population (the global average is 4.2/1000) [5]. The crisis is accelerated,
inter alia, by HIV/AIDS, health worker migration and chronic underinvestment in
the health and other social sectors due to economic reform conditionalities [7].

However, the crisis is not only about low numbers of health workers. It also
encompasses problems with skill mix, quality of care and staff motivation [5, 7].
Migration is of particular concern because not only does it occur internationally, between developed and developing countries, but it also occurs within countries between the richer and poorer regions and, especially, between urban and rural areas. In the end, it leads to both international and within-country geographic imbalance in the distribution of health workers. Apart from geographic imbalance, analysts have identified a number of other imbalances in human resources for health, e.g. skill/mix, gender, institutional and service types of imbalance [79], but in this study, I focus on rural-urban imbalance in the distribution of health workers only, which is a form of geographical imbalance.

2.4 Rural-urban imbalances of HRH

Globally, the geographic distribution of health care workers between urban and rural areas is imbalanced, with rural areas having a lower density of health workers than urban areas in virtually all countries irrespective of the level of socio-economic development [5, 77, 80-84]. The situation of imbalance pertains in both developed and developing countries. At a global level, whereas about 50% of the world’s population lives in rural areas, only 38% of the world’s nurses and less than 25% of the world’s doctors work in rural areas [5]. For some cadres, the global rural-urban imbalances are so high that, for example, urban areas have up to 15.6 times more physicians and 23.4 times more radiographers in urban areas than in rural areas [81]. Apart from this global imbalance, one can identify examples of rural-urban imbalance in different regions and different levels of development.

For example, in terms of socio-economic development, even some OECD countries, the most developed in the world, have serious staffing disparities. Well-served areas in OECD countries have health worker densities several times better than the national average (e.g. well-served areas have 2.5 times better staffing than the national average in the USA, 2.2 times in Turkey and 10 times in France) [80, 85]. At a regional level, rural-urban disparity in the distribution of General Practitioners (GPs) in Europe gets worse the poorer the country is [86] within-country density gets poorer as the region of the country also gets poorer [87]. At country level, rural
areas with about 20% of the population have only 6% - 9% of the available physicians in the USA [88-89] and about 11% of the Registered Nurses in Canada [90-92]. In Ireland, studies have also confirmed the existence of the Inverse Care Law, whereby rural areas, with a high demand and need for GP services and nurses were found to have less access to them than most parts of urban areas [93-94], maybe with the exception of deprived areas in urban centres. The rural-urban disparity in health workforce availability also exists in BRICS countries (Brazil, Russia, India, China and South Africa). In China, for example, the density of doctors is 2.1/1000 population in urban areas compared to 1.0/1000 in rural areas while that for nurses is 1.7/1000 in urban areas compared to 0.5/1000 in rural areas [95].

The situation of rural-urban imbalance is worse for developing countries. Most of the 57 countries below the staffing threshold to attain the MDGs also have rural-urban imbalance in the distribution of health workers. However, regional organisations in sub-Saharan Africa like the WHO-Afro office, the East, Central and Southern Africa-Health Community (ECSA-HC), the Southern African Development Community (SADC), and the East African Community (EAC), do not provide within-region disaggregation of geographical distribution of health workers. In addition, most sub-Saharan African countries do not provide within-country rural-urban disaggregation of the distribution of health workers. Nevertheless, data on a few countries in the region are available, though aggregation at regional level is not possible due to varying quality and the different methodologies used to collect the data. The few studies available, though, confirm the imbalance e.g. in Zambia urban areas have 10 times more doctors than rural areas [96], and in Tanzania, the remote Bukombe district had a health worker density of 0.3/1000 population compared to the relatively urbanised Moshi district with 12.3/1000 [97]. In Burundi, 69% of the midwives, 63% of qualified nurses, 40% of general doctors and 75% of medical specialists are found in the capital, Bujumbura [98].
2.5 Causes of imbalance in the distribution of health workers

The within-country imbalance in distribution of health workers between urban and rural areas results from a number of factors that have been described as “push” factors or “pull” factors by Padarath et al\(^8\) [19]. “Pull” factors are those elements outside rural areas e.g. in urban areas and richer or developed countries, that attract health workers out of the rural areas. They include better salary, working conditions, equipment, housing, availability of other amenities and utilities, more job opportunities for spouses, better schools for children, opportunities for further studies, better probability of additional sources of income, an overall perceived better quality of life, etc [100]. By attracting health workers elsewhere, “pull” factors keep them from going to rural areas in the first place, and draw them out once they are there. In short, they lure health workers to the prospects of

“an urban-based, middle-class professional work and personal life”

“Push” factors are those elements within the rural area that encourage or make it imperative for the health worker to leave the rural area. They may be endogenous or exogenous to the health system [19]. Endogenous reasons may be financial or non-financial. The endogenous financial “push” factors include poor remuneration in terms of amount (basic salary and total take-home package), timeliness of payment (e.g. delayed salaries), narrow scope of incentives (e.g. insurance cover, bonuses, maternity leave payments etc) and slow pace of increment (leading to erosion of the salary by rapidly rising inflation). The endogenous non-financial reasons include poor working conditions (lack of appropriate equipment; lack of/inadequate appropriate inputs and supplies; lack of job security e.g. lack of contracts, easy dismissals; poor infrastructure e.g. lack of accommodation, poor housing, lack of electricity, water and other utilities etc); conflicts at the workplace; bad management e.g. feelings of lack of organisational justice, with members

\(^8\) The terms “push” and “pull” factors were first used by Lee to describe the factors that lead to migration 99. Lee, E.S., A Theory of Migration. Demography, 1966. 3(1): p. 47-57.
feeling they are unfairly bypassed in promotions and appointments, inequitable remuneration, opportunities for study or travel etc; professional isolation leading to feelings of neglect and abandonment by the health systems and professional colleagues; fear of high risk of occupational infection; etc [19, 102-104]. The literature tends to mention the endogenous reasons only. In the next section I describe some exogenous factors.

Exogenous push factors include lack of anonymity in rural areas [105]. Residents of rural areas are usually well-known to each other and the technical performance of health workers is frequently evaluated not only on its technical merit but also on other criteria e.g. marital status, condition of marital situation etc. What happens in the health worker’s personal life is often imputed to be operating at the workplace. For example, if a health worker has marital problems, the community assumes that he/she has similar problems at work. According to Long and Weinert, there is “role diffusion” [105-106], which discourages health workers from staying. Health workers also often cite conflicts with community members as causes for attrition from rural areas. Examples of such conflicts include frequent accusations of “political interference” due to differences with antagonistic or overzealous local political leaders; and problems in social relations with members of the community [107-109]. In addition, conflicts in the community leading to violence and general insecurity, e.g. civil war, are a common cause of health worker attrition from rural areas [110-113]. Lack of job opportunities for spouses, or of good schools for children and a generally poor quality of life in rural areas are other strong exogenous push factors from rural areas [19, 114-115].

However, while push and pull factors synergise each other’s effect of taking health workers out of rural areas, there are other resistant forces that have to be overcome. These have been referred to as “Stick” and “Stay” factors [19, 116-117]. “Stick” factors keep people in their rural position despite pressure from both “push” and “pull” factors. They include incentives, good working and living conditions, opportunity to practice agriculture, animal and livestock farming; love
for a clean atmosphere; love for nature; safety for raising children etc [118]. “Stick” factors generally lead to high staff morale and commitment to the workplace in the rural area. If the “push” and “pull” factors do not exceed the “stick” factors, the health worker does not move from the rural area. Therefore, there is always a trade-off between “stick” factors, on the one hand, and “pull” and “push” factors, on the other. “Stay” factors work to keep those who left rural areas from returning to the rural areas. Therefore, they work in support of “push” and “pull” factors. “Stay” factors include attachment, integration and getting accustomed to the urban place or abroad such that the health workers find it hard to countenance adjusting their lifestyle to that in the rural area again [19]. Therefore, they decide to stay wherever they may be, either in the urban area or in the foreign country.

Ultimately, the availability of health workers in the rural area is a result of the balance between recruitment and retention. In the USA, in a study comparing retention in two types of rural areas (Health Professional Shortage Areas, HPSA, vs non- Health Professional Shortage Areas, non-HPSA), Pathman et al. found that rural shortages were not due to poor retention, but rather, to poor recruitment [119]. Thus, they recommended an emphasis on recruitment, although other studies have recommended an emphasis on retention [120]. However, health systems need a way to quantify the adequacy of health worker availability.

To illustrate the interplay of these factors, I apply a modified version of the model of Padarath at al. [19] as shown in Fig. 2.1. I include several new features. First, I show the “pull” factors in both the rural and external areas. “Pull” forces in rural areas are the forces that act in favour of rural areas such as the pro-rural policies of governments and their partners, e.g. NGOs and bilateral or multilateral development partners, market forces and a natural attraction to rural areas. Governments may also utilise policies which compulsorily push health workers to rural areas or, together with their partners, may use market forces to attract health workers to rural areas e.g. by incentivising rural practices.
However, rural areas have their own inherent “pull” factors which attract health workers. They offer unique opportunities for professional practice, engaging in money-making ventures and they are often attractive for a number of other reasons [121]. Keane et al. have also identified several other reasons, including the opportunity to practice in advanced roles beyond the normal scope of practice, to become “specialist generalists” etc [114, 122] as being attractive features of rural practice. Fig. 2.1, therefore, shows the rural “pull” factors and those additional forces, with a clear pull to the rural areas and, also, shows the pro-rural forces that may be outside the rural areas. I have also indicated that after health workers qualify, they do not only go to the rural area but, actually, the majority tend to go to urban areas or abroad unless there is a natural attraction or pro-rural policies that attract or force the graduates to go to rural areas. I have also used the weight of the lines to indicate the strength of the forces.

### 2.6 Measures of health worker sufficiency

Currently, there are multiple measures used internationally to describe sufficiency of health workers. A single measure remains the health manager’s Holy Grail. Most of the available measures are facility-based and measure direct patient contact.
There are a few which measure health workforce availability at population level, in order to distinguish poorly-served and well-served areas. The measures used in each country depend on the context and purpose, and the selection of criteria is mostly as a matter of “custom and practice” [123]. For example, in the past, population-related cadre-specific ratios e.g. health worker to population ratios, such as nurse-to-population or doctor-to-population ratios were used, mainly to describe a population-level picture [124]. Then, production-based methods e.g. the stock-and-flow method [125] were adopted. Later, service-related methods e.g. needs-based method [125], demand-based method [125], managed care method [125] which is uses patient-to-staff ratios like “patients per nurse”, “beds per nurse” etc were introduced.

For example, it is mandatory by law in some countries for health care institutions to meet some of these staffing ratios in order to maintain quality. In California, USA, patient-level mandated staffing ratios are a legal minimum required to offer quality care e.g. hospitals are not allowed to have a nurse:patient ratio worse than 1:6 [14, 126-128]. In Australia, the worst acceptable nurse:patient ratio is 5:20 per ward [129]. Other recent measures include “health worker density” [5, 7-8]. Research shows that mandatory ratios have led to a decline in the number of patients per nurse [14, 130]. A justification for stringent ratios is that increase in nurse workload leads to higher infection rate and mortality. A major European study found that increasing nurse workload by one extra patient increases the 30-day risk of inpatient mortality by 7% [13]. However, critics of nation-wide mandatory staffing ratios argue that such ratios are not an efficient way to use scarce resources because they lead to increased costs of care with no guarantee of better patient outcomes [131].

In some countries, such as Australia, UK, New Zealand and Ireland, facilities use workload measures such as measures of patient dependency e.g. the Community Client Need Classification System (CCNCS) [132], acuity classification systems etc [132-133]. In the UK alone, Hurst identified five classification systems: professional
judgement, nurse per occupied bed, acuity-quality, timed-task approach, and the regression-based method [134]. Uganda uses fixed norms established by the Ministry of Public Service for Local Government (LG) health facilities. The LG norms depend on facility size estimated in terms of bed capacity, rather than the actual volume of activities. For example, all 100-bed general hospitals are allocated 12 doctors, 73 nurses, 28 midwives, 8 clinical officers and 15 nursing assistants irrespective of variations in the level of output or location [21].

LG norms were established mainly to enable the government to compile the payroll but they do not give realistic minimum staffing in most facilities, whether urban or rural. Unfortunately, due to lack of funds, the LG norms which were supposed to be the minimum, have, in many cases ended up becoming the maximum, like in other countries [135-136]. Therefore, they have remained inaccurate at determining the appropriate staffing level and contributed to the current staffing shortage.

Currently, the country is in the process of adopting a new approach, the Workload-based Indicators of Staffing Need (WISN). The WISN method was first introduced by the WHO in 1998 [124]. It is currently spreading in a number of countries like India [137], Bangladesh [138], Uganda [139-140], Mozambique [141], Namibia [142] and others. The method determines the staffing requirement on the basis of actual workload experienced in a previous period. Given that workload does not change very much over similar periods of the year, normally the workload data of the immediately past year are used to determine the actual staffing required [143-144].

Other sources use skill-mix ratios, the commonest of which is the doctor:nurse ratio. Again, there is no universal standard on the most appropriate ratio, because what is appropriate varies with the health system and the tradition of care. By 2006, nurse:doctor ratios were 8:1 in Sub-Saharan Africa and 1.5:1 in the Western Pacific [5]. High nurse:doctor ratios mainly indicate a severe shortage of doctors than a high availability of nurses. A recent study showed that poorer countries tend to have relatively more doctors than nurses, compared to richer countries [145]. Whereas most countries use facility-based measures of staffing adequacy as seen
above, the USA uses composite measures including geographic and service definitions based on the Index of Medical Underservice (IMU) e.g. Medically Underserved Areas, Health Professional Shortage Areas, Physician Shortage Areas and others [146-147]. Designation of being medically underserved is one of the earliest steps in solving the problem of health worker shortage. It entitles an area to priority consideration on a number of issues, including licensing new providers, accessing loans etc.

2.7 Effects of rural-urban imbalance in staffing

Staffing levels are correlated with certain health outcomes. For example, the WHO asserts that the density and quality of doctors is directly correlated with cardiovascular outcomes and that staff cuts, e.g. during economic reforms, were associated with increased infant mortality [5]. Another study showed increased adult mortality with reform-related staff cuts [13]. At facility level, higher nursing levels have been associated with better outcomes in intensive care and surgical patients [13, 148-149], lower risk of readmission, better staff satisfaction and retention [150-151], and lower mortality in general [14]. Other studies have shown similar findings for other staff cadres too [152]. At national level, there is a correlation between the density of health workers and the likelihood of attaining coverage targets of key services like vaccination, skilled birth attendance etc, necessary to attain the MDGs. Countries with higher density have a higher likelihood of attaining the MDGs [5, 11]. In Mexico, urban areas have a 15% excess of unemployed doctors while rural areas suffer shortages of doctors. In that country, both life expectancy at birth and infant mortality rate were found to be correlated with this distribution of doctors [82]. However, some analysts challenge the evidence for a relationship between staffing levels and clinical outcomes [153].

Due to rural-urban imbalance in staffing, a number of effects are observed, which characterise the health systems of developing countries because they have the highest levels of such imbalance. First, rural areas are left with few qualified staff. The staffing gaps may be left unaddressed, often due to lack of funds to recruit new
staff, leading to work overload for the remaining staff. Prolonged work overload leads to stress and, eventually, burnout, decline in the quality of care and errors in case management, leading to potentially fatal results for both patients and health workers [8, 154]. Secondly, once staff is stressed due to overload, they get frustrated and lose morale because they cannot deliver care to their professional standards and feel that they cannot satisfy their “professional conscience”[155]. Therefore, rural health workers are more likely to be demotivated and to plan to leave their workplace [156-158]. A third effect is that, in order to fill in the staffing gaps and to reduce workload, rural areas recruit less qualified staff, and shift important tasks to them, thus entrenching low quality care. In Uganda, in 2003, 32% of lower level health units in the rural areas were staffed with only Nursing Aides, an unqualified cadre of nursing assistants who receive only on-job training [159]. In Malawi, Ethiopia and Uganda, high level clinical work was shifted to untrained Health Surveillance Assistants (HSAs) or equivalent cadres [160] and other categories of community health workers (CHWs) [161]. Using less qualified staff may reduce the quality of care offered and subject rural residents to care of a lesser quality than that availed to their urban counterparts. Yet, studies have shown that, actually, the need for care is higher in rural areas, in both developed and developing countries. In developed countries, this is because rural areas are usually inhabited by the elderly with chronic illnesses and often restricted to home [93] and due to limited and timely access to emergency health services [162-163]. In developing countries, however, it is usually due to the rural–urban gradient in social determinants of health [164-165]. Thus, rural-urban imbalance in staffing supports Hart’s “inverse care law” not only in numbers but also in quality. Fourthly, residents of rural areas are aware of the rural-urban quality gradient. Therefore, with time, especially in developing countries where people are not attached to specific providers, they start ignoring the referral system and bypassing the lower levels of care [166-168]. They seek for services at higher levels of care, even up to tertiary levels.
Bypass behaviour is seen, especially with emergency cases and where the community suspects a likelihood of complications e.g. severe childhood illnesses and maternity cases, but is also known for problems that could be managed at the primary level [169-170]. In short, lack of trust in the health system due to a staff shortage indirectly puts the responsibility for diagnosis and deciding on referral in the hands of the household members, who decide where to take their patient. A study in India found that close to 60% of self-referred acute respiratory infection cases in a tertiary hospital were due to lack of confidence in health workers at lower levels [171]. This overloads tertiary care with unnecessary primary care cases and diverts them from their responsibilities of attending to more complicated cases. Ultimately, it is also more costly for the patients. This is also the case in Uganda [172], although no studies on the effect of bypass behaviour on tertiary level facilities have been published.

2.8 Solutions to the global imbalance in distribution of health workers

In order to address the HRH crisis, a number of general interventions have been undertaken at global and international levels, while specific interventions have been undertaken at national and sub-national levels. One of the first general international concerted efforts to address the HRH crisis was setting up of the Joint Learning Initiative (JLI), comprising of prominent health policy scholars, medical teachers and researchers from all over the world, to synthesise available knowledge on the HRH situation [7]. Their 2004 report, Human Resources for Health: Overcoming the crisis, drew global attention to the HRH crisis and set the ground for the World Health Report 2006: Working together for Health of the WHO [5]. The World Health Report 2006 quantified the extent of the crisis in all the WHO member countries and called for a “decade of action on Human Resources for Health”, until 2015, during which activities focused on the HRH crisis would be undertaken [5]. Key among the activities are studies to demonstrate the extent of the problem of shortage and imbalance in the distribution of health workers, as a way to provide evidence to policy makers, and specific interventions to address and
reduce those problems. I see the present study in that light, contributing to the available knowledge regarding the HRH issue and how the crisis can be resolved, especially now that the *decade of action* is ending.

Apart from the high-level acknowledgement of the existence of a global crisis in HRH, other efforts have included the 2006 establishment of the Global Health Workforce Alliance (GHWA), a body that brings together multiple key stakeholders on health and health workforce issues. Housed by the WHO in Geneva, the GHWA helps to identify and advocate for evidence-based and cost-effective solutions to HRH problems, especially in the three regions worst-affected by the HRH crisis i.e. Africa, Latin America and South-East Asia [173]. Its location also serves to maintain high-level visibility of the HRH issue, especially among other global health initiatives (GHIs). It is a fact that GHIs have raised previously unprecedented levels of funds for health care [174]. However, their implementation had disrupted the health systems of the recipient countries because their *modus operandi* was to focus on ensuring the availability of selected disease-specific inputs, while ignoring other health system components necessary for the application of the inputs they provided [175].

One such neglected key component was human resources. The systems were disrupted to the extent that health workers in recipient countries started abandoning their positions in public service, especially in the rural areas, to go and work in disease-specific projects funded by the GHIs because they paid much better and provided necessary facilities which were lacking in the government services [176-178]. This severely worsened the already existing rural-urban HRH imbalances [179]. One of the early activities of the GHWA, therefore, was to engage the GHIs to ensure that they invest in HRH as part of their funding arrangements, and to coordinate their work with national health systems. Following frequent complaints, GHI stakeholders conducted studies to identify challenges and synergies between them and health systems [180], and made a joint statement, the *Venice Statement* [181], which committed them to coordinate with health systems and maximise on each other’s identified synergies [181-182]. Most GHIs now accept to include
funding for human resources as a component in their budgets and to deal with the
established systems of the recipient governments. This has helped to stabilise the
HRH situation. In addition, the GHWA organised the First Global Forum on Human
Resources for Health, in Kampala, Uganda, at which the Kampala Declaration and
Agenda for Global Action (KDAGA) was made, whose entire Agenda Point 4.0 is
dedicated to ensuring equitable distribution of qualified health workers [183].

In addition, given that one of the leading causes of within-country and international
imbalances of the distribution of health workers was international migration, the
WHO spearheaded the adoption of a global compact on the international
recruitment of health workers, the WHO Global Code of Practice on the
International Recruitment of Health Personnel, agreed upon by the major HRH
receiving and sending countries [184]. The overall aim of the code is to discourage
ongoing indiscriminate international recruitment of health workers, especially by
avoiding recruiting from countries facing severe HRH shortages.

For example, in a bid to solve its staff shortages, the UK made international
recruitment of 48,000 nurses and 17,500 physicians in a short time [185]. Similarly,
Ireland recruited 10,000 nurses from India and the Philippines by the year 2008
[186]. The USA instituted special visas (J-1 visas) for student physicians, with a
precondition of serving in a rural area for three years as an alternative to being
required to spend two years in their home country after completion before being
eligible to return to the USA [187]. In Australia, the government instituted a
moratorium on International Medical Graduates (IMGs), requiring them to serve in
designated rural areas for a minimum of 10 years before being registered as eligible
providers for national health services [188-189]. This did not deter IMGs from
developing countries to go to Australia. The net effect of migration on the sending
countries was devastating. Clemens and Petterson found that, in 2000, 19% of
Africa’s (and 28% of sub-Saharan Africa’s) physicians lived abroad [53]. In 2005, net
importers of foreign health workers, like Australia and Canada, had about 200
doctors and 800,000 nurses/100,000 population, while countries which were net
exporters of health workers, like Ghana had 6.2 doctors and 72 nurses/100,000 [190].

Some countries facilitated migration directly or indirectly while others did not. Those which participated directly, like The Philippines, had a formal national policy of exporting labour, from which they earned a tax and received remittances [191]. Those which participated indirectly include countries like Zambia, which paid their young nurses a Voluntary Separation Package (VSP) in order to encourage early retirement from the public service as part of economic reforms. However, the government knew that they would use the money to relocate to European countries [192]. In a similar manner, Uganda welcomed international recruiters from the UK [54] and transferred health training institutions from the Ministry of Health (MOH) to that of Education and Sports (MOES) in order to increase the production of health workers for export of labour [139].

What has been observed of the migrated health workers, however, is that until 2000, they did not always move directly from the rural areas to the developed countries of their choice. Instead, they went through a couple of stages, the “stepping-stones migration” [192-193], as illustrated in Fig. 2.2. Similar step-wise movement was observed recently among health workers in Vietnam, where their movements were classified as “four directions of travel” [194]. To mitigate the effects of migration, some countries have tried to recoup their health workers by encouraging “circular migration” programmes whereby migrated health workers do not have to return permanently. They can return for short facilitated periods, offer specified technical outputs and go back to their new countries, thus easing pressure on the sending countries [195].

As part of the solutions to the inequitable distribution of health workers, the WHO and the GHWA have maintained high-level policy advocacy on the issue of HRH inequitable distribution. The WHO first evaluated the interventions implemented to reduce rural-urban imbalances in different countries [196]. Since then, a number of
important meetings have taken place and addressed the HRH questions e.g. two international conferences on Health Systems Research (Montreux, Switzerland, 2011 and Cape Town, South Africa, 2014), and two Global Forums on Human Resources for Health (Bangkok, Thailand, in 2011 and in Recife, Brazil, in 2013). At all these meetings, important HRH resolutions have been taken, the latest of which is *The Recife Political Declaration on Human Resources for Health: renewed commitments towards universal health coverage* [197], which proposes further actions to redress the maldistribution of health workers and improve staff retention. Different countries have made commitments to implement those actions. Uganda vowed to improve the availability of health workers by increasing pre-service training, giving incentives to attract and retain health workers, improve staff productivity and accountability, and to improve partnership with the private not-for-profit sector [198].

![Diagram of health worker migration pattern](modified_from_PADARATH_etal_19)

**Fig. 2.2 “Stepping stones” migration pattern of health workers from developing countries**

*Source: Modified from Padarath et al. [19]*
2.9 Conclusion

This chapter has looked at the genesis of the crisis in human resources for health (HRH). It described the crisis in the context of a wider and global health crisis occasioned by a demographic and epidemiologic transition. It also described the detailed characteristics of the crisis including the problem of rural-urban imbalance in distribution of health workers, the mechanisms by which the imbalance occurs, and the high-level advocacy activities that have taken place to address the crisis. It concludes by describing some general international interventions to address international inequitable distribution of health workers. The next chapter describes specific interventions at national and sub-national levels.
3 INTERVENTIONS TO ADDRESS DISTRIBUTIONAL IMBALANCES

3.1 Introduction

In the preceding chapter, I described some general interventions to reduce international imbalance in the distribution of health workers. This chapter describes national and sub-national interventions to retain health workers in rural and remote areas (and their effectiveness, where available), some known modifiers of their effects, and concludes with caution about negative effects of some interventions. The repertoire of the interventions is large, addressing attraction to the health profession, interesting students in rural areas during training, attraction and deployment to the rural areas, and retention therein. The interventions are implemented at different points of the so-called “rural pipeline”, a concept which describes the long process over which a health worker is prepared, educated and taken to the rural area [199-200]. According to the American Academy of Family Physicians (AAFP),

“The term “rural pipeline” refers to the long and complex process of rural upbringing and education that leads a person to choose a career as a rural physician. The rural medicine pipeline addresses both recruitment and retention. Factors that increase the output of physicians practicing in rural areas can be explored at each of the advancing stages along the pipeline…… Pre-medical school factors, medical school factors, residency factors, placement and retention…..” [201] p. 2

As per the operational definition of retention that I used in this study, any health worker who leaves before completing two full years of service in the rural area constitutes a leakage in the pipeline. Interventions on the rural pipeline start in the pre-medical/nursing school years, followed by those at the entry to medical/nursing

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9 Whereas the Academy uses the above definition for physicians, the concept is applicable to all health workers.
school, those during pre-service training, those at the time of choice of specialty, those during residency training, those at the time of choice of practice location and those when the health worker is in the rural area [201], as shown in Fig. 3.1.

Fig. 3.1 The rural pipeline

The earliest published interventions aimed at increasing the number of health professionals in rural areas were educational programmes implemented in USA in the early 1970s [202-203]. Upon evaluation, it was found that health workers from rural areas were more likely to choose Family Medicine or Primary Care as their specialty, to work in rural areas and to get retained longer than those from non-rural backgrounds. Since then, there have been multiple interventions to attract and retain health workers in rural areas. Different authors have used different frameworks to explain the interventions [204-209], most of which can be mapped onto the rural pipeline. In the next section, I use the WHO classification to describe the interventions [77]. I chose it because it restricts itself to only those interventions within the scope of human resources management, and fully acknowledges that other possible interventions exist beyond that scope.
In 2010, the WHO made recommendations of interventions that all countries could consider, in order to increase the retention of health workers in their rural and remote areas [77]. Choice of particular interventions would depend on the applicability and affordability of each proposal to each country. The recommendations were classified on a framework of four thematic areas (educational, financial, regulatory, and personal and professional support) with 16 intervention areas as shown in Table 3.1. Whereas there are many interventions contributing to increase the number of health workers available in rural areas (Table 3.2), I discuss only those aimed at increasing retention. Overall, retention of health workers in rural areas is considered a personal experience determined by multiple intrinsic and extrinsic factors. It is mostly a result of the individual health worker undergoing “experiential place integration” in the milieu of the community and workplace [210] and requires adequate physical and mental preparation [211].

**Table 3.1 WHO global recommendations for retention of health workers in rural areas**

<table>
<thead>
<tr>
<th>Category of intervention</th>
<th>Intervention emphasis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Educational</strong></td>
<td></td>
</tr>
<tr>
<td>A1. Support for students from rural backgrounds</td>
<td></td>
</tr>
<tr>
<td>A2. Health professional schools located outside major cities</td>
<td></td>
</tr>
<tr>
<td>A3. Clinical rotations in rural areas during studies</td>
<td></td>
</tr>
<tr>
<td>A4. Curricula that reflect rural health issues</td>
<td></td>
</tr>
<tr>
<td>A5. Continuing professional development for rural health workers</td>
<td></td>
</tr>
<tr>
<td><strong>B. Regulatory</strong></td>
<td></td>
</tr>
<tr>
<td>B1. Broader scope of practice</td>
<td></td>
</tr>
<tr>
<td>B2. A new type of health worker</td>
<td></td>
</tr>
<tr>
<td>B3. Compulsory rural service</td>
<td></td>
</tr>
<tr>
<td>B4. Subsidised education in exchange for service</td>
<td></td>
</tr>
<tr>
<td><strong>C. Financial</strong></td>
<td></td>
</tr>
<tr>
<td>C1. Appropriate financial incentives</td>
<td></td>
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<tr>
<td><strong>D. Professional and personal support</strong></td>
<td></td>
</tr>
<tr>
<td>D1. Better living conditions</td>
<td></td>
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<tr>
<td>D2. Safe supportive working environments</td>
<td></td>
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<tr>
<td>D3. Outreach support</td>
<td></td>
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<tr>
<td>D4. Career development programmes</td>
<td></td>
</tr>
<tr>
<td>D5. Professional networks</td>
<td></td>
</tr>
<tr>
<td>D6. Public recognition</td>
<td></td>
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</tbody>
</table>

*Source: [77] p.17*
3.2 Objectives of the interventions

Retention interventions in each country are nuanced by the characteristics of the system in which they are implemented. Socio-economic differences between countries are reflected in the interventions that their health systems adopt. For example, one major contextual difference that influences interventions is the mechanism of payment of health providers. In countries like the USA and Canada, services are largely provided by private, non-salaried for-profit providers. Their earnings increase with the volume of care [212]. Being a market-based system, physicians should place their services in urban areas because that is where they will get maximum utility, due to the larger and more lucrative urban market, according to location theory [213]. Rural areas would not be attractive to them, because of a small market and low purchasing power. There are too few people willing and able to pay the price that would attract private practitioners. However, rural areas also need the services. Since, despite the need, their demand and price for health care are too low to attract supply [214-215], governments intervene to influence the providers’ practice location choice with financial incentives to compensate the providers for the low demand. This ensures that they take and keep their services in such rural areas and guarantee access for the few residents of the remote locations.

In most developing countries, however, most rural facilities belong to government or private not-for profit faith-based organisations. The governments and faith-based organisations do not have the money necessary to make financial offers attractive enough for private for-profit providers to accept to locate in rural areas. Therefore, they depend on salaried staff, whose incomes are independent of outputs. As a result, the governments are wont to use compulsory regulatory approaches than market-based approaches to take health workers to such locations. Other interventions are usually supportive of regulatory interventions. All in all, the interventions are many and address what WHO calls “finding them”, “educating them”, “placing and keeping them where they are needed”, and “motivating them” [216] p.9. They have four broad objectives, but I focus only on
those whose primary aim is to retain staff. I have summarised the others under the other three objectives in Table 3.2. The first objective is to increase the number (stock) of rural-origin medical students in the medical schools, with the ultimate aim of increasing the pool from which rural health workers can be drawn. It is addressed through educational, financial and personal support interventions. It has two motives: increasing the overall number of students in medical and nursing schools and increasing the proportion of students with a rural origin. Rural-origin students are more likely to accept to work in rural areas, and to stay there for long [217-230]. The second objective is to increase the number of health professionals interested in rural areas. This is also achieved through educational interventions. The third objective is to attract or make more of the qualified health professionals actually go to rural areas. This is achieved through regulatory, financial, educational, personal and social support interventions.

The fourth objective is to retain those professionals who are already in the rural areas. This is also achieved through financial, regulatory, educational, personal and social support interventions. There is significant overlap between the interventions under the third and fourth objectives. However, for brevity, I summarise the interventions to meet the objectives in Table 3.2 and only discuss the fourth objective in the next section.
### Table 3.2 Interventions to increase health workers in rural and remote areas

<table>
<thead>
<tr>
<th>Objective 1</th>
<th>Increase the stock of rural origin students in medical and nursing schools</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-medical school at secondary or high school levels</td>
<td><strong>Educational interventions</strong>&lt;br&gt;&lt;br&gt;Career education/guidance in rural areas about available health careers e.g. through science fairs, appointing careers masters etc</td>
<td>[231-235]</td>
</tr>
<tr>
<td></td>
<td>Career education about the link between science subjects and health careers</td>
<td>[231-232, 236]</td>
</tr>
<tr>
<td></td>
<td>Strengthening science education at high school level e.g. through “STEM” (Science, Technology, Engineering and Mathematics) projects, “3000 by 2000” projects, Magnet Science high schools etc; providing science equipment to schools, organising competitive events e.g. mathematics contests etc</td>
<td>[230, 232, 237-240]</td>
</tr>
<tr>
<td></td>
<td>Running numeracy programmes</td>
<td>[241]</td>
</tr>
<tr>
<td></td>
<td>Additional technical support in science subjects to individuals in the candidate classes</td>
<td>[232]</td>
</tr>
<tr>
<td></td>
<td>Affirmative Action for rural students by adding them extra points at admission</td>
<td>[55, 242-243]</td>
</tr>
<tr>
<td></td>
<td>Increasing student intake e.g. by Expanding the physical capacity of health training institutions through more training schools or more space at the training schools; Expanding the technical capacity of pre-service health training institutions (HTIs) e.g. by training teachers of health workers</td>
<td>[244-247]</td>
</tr>
<tr>
<td></td>
<td>E-learning and distance education</td>
<td>[248-249]</td>
</tr>
<tr>
<td></td>
<td>Scholarships</td>
<td>[232]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Objective 2</th>
<th>Increase the number of health professionals interested in rural areas</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-service medical school level</td>
<td><strong>Educational interventions</strong>&lt;br&gt;&lt;br&gt;Targeted selection of students of rural origin e.g. the Physician Shortage Area Program (PSAP) of the Thomas Jefferson University and the WWAMI programme with affirmative action like “compensatory rural origin points”</td>
<td>[202-203, 220, 242-243, 250-254]</td>
</tr>
<tr>
<td></td>
<td>Exposing students to information about rural health issues by various approaches e.g. rural issues in curriculum, compulsory rural clerkship or rotation, an elective rural clerkship, a full course relevant to rural health with qualifications in Rural Health, Primary Care or Family Medicine but based in an urban school, career mentorship and support during training, a rural medical school campus of an urban university, an urban medical school but with some years of the course taught in a rural area, university that is urban, but having a generally rural focus e.g. Jichi Medical University in Japan, nursing school in a rural area</td>
<td>[202, 220, 226, 232, 250, 255-281]</td>
</tr>
<tr>
<td></td>
<td>Fully rural residency under a preceptor</td>
<td>[269, 282-287]</td>
</tr>
<tr>
<td></td>
<td>Urban residency in Family Medicine, Primary care or Rural Health as a specialty but with a rural training track (RTT)</td>
<td>[269, 282]</td>
</tr>
<tr>
<td><strong>Objective 3</strong></td>
<td><strong>Increase the number of qualified health professionals who actually go to rural areas</strong></td>
<td></td>
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<td>----------------</td>
<td>------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>[288]Upon qualification</strong></td>
<td><strong>Regulatory interventions</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Purely compulsory interventions e.g. mandatory rural practice for all medical graduates [73, 289-293]</td>
<td></td>
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<tr>
<td></td>
<td>Stick-and-carrot interventions e.g. mandatory rural practice with a way out e.g. a “buy-out” or a benefit after the rural practice requirement e.g. a scholarship, rapid confirmation in service, rapid promotion, serving a fixed-length rural practice, a moratorium of minimum rural practice followed by licensing, special visas for international medical graduates, permitting a wider scope of practice in rural areas [102, 187, 286, 288-289, 294-305]</td>
<td></td>
</tr>
<tr>
<td><strong>Financial interventions</strong></td>
<td>Education-related financial interventions as non-refundable investment in national human capital e.g. by paying tuition, transport and upkeep costs, or as refundable student loans, paid with bonding for return of service or in cash, Loan Forgiveness Programmes etc [27-28, 120, 277, 294, 306-320]</td>
<td></td>
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<tr>
<td></td>
<td>Remuneration-related financial interventions e.g. better salary and salary top-ups or special financial allowances for rural, remote and other difficult areas, terminal benefits [72, 75, 102, 321-331]</td>
<td></td>
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<tr>
<td></td>
<td>Capitalisation-related interventions e.g. loans or loan guarantees for capital investments like land, houses, cars or tuition etc [327-329, 332-333]</td>
<td></td>
</tr>
<tr>
<td><strong>Marketing interventions</strong>: “Promote the practice, not the region”, upgrading rural health centres to hospitals</td>
<td>[334]</td>
<td></td>
</tr>
<tr>
<td><strong>Recruitment interventions</strong>: Regional recruiter strategy</td>
<td>[335]</td>
<td></td>
</tr>
</tbody>
</table>
3.3 Interventions to retain health workers in the rural areas

Several interventions have been applied to retain health workers in rural areas. They may be educational, regulatory, financial or providing personal support.

3.3.1 Educational interventions

There are various educational interventions to keep rural practitioners motivated and working in rural areas, as well as updating their knowledge. Health care is a rapidly changing field, with new health technologies introduced frequently. Therefore, health workers need to be kept abreast of latest developments and approaches to care. As a result, most countries have continuing professional development (CPD) activities, which mainly comprise of training sessions for the health workers on clinical and managerial topics (hence the broader title of CPD rather than CME, Continuing Medical Education, as it used to be called\(^{10}\)). The sessions may be conducted on-site by the health workers themselves, or by a guest from outside the hospital. The mode of delivery of CPD depends on the available facilities, expertise and preference of the audience or presenter. In some countries, CPD is optional, while it is mandatory for re-licensing, in others. In some countries, it is provided by the health authorities while in others it is up to the health workers to organise CPD for themselves. Other countries have accredited CPD providers and only recognise CPD provided by those. In addition, some states in the USA have Area Health Education Centres (AHECs), which link medical schools with the rural health practitioners in that area, for purposes of CPD [337]. The AHECs provide accredited CPD and are useful for re-certification of rural practitioners. In other countries, CPD is provided in centralised locations while in others it is at each health facility [338-339].

The modes of delivery of CPD include face-to-face peer interaction among colleagues in the same health facility in the presence of a facilitator, use of

\(^{10}\) Some sources mention Continuing Medical Education (CME). However, I opted for CPD because the topics covered under such training are broader than the medical or clinical scope. Some cover social survival skills, how to make money in a remote area, how to manage a health facility, how to get schools for children etc. Therefore, CPD is a broader and all-encompassing term covering all cadres and all manner of training 336. Peck, C., et al., Continuing medical education and continuing professional development: international comparisons. British Medical Journal, 2000. 320: p. 432-435.
telemedicine through video-conferencing with experts located somewhere else, use of Compact Discs (CDs) sent by an organiser, reading of journal articles, etc [340]. Typically, CPD does not lead to additional qualifications. However, rural health workers need it to stimulate them professionally so that they can stay up to date, as an opportunity to mentor newer health workers, and as a way to help younger health workers identify areas of future specialisation [114]. It also increases staff confidence and they do not feel isolated because of being in a rural area. In spite of this, the effectiveness of CPD in retention of rural practitioners is often discounted. Although regarded as important and desired by rural practitioners [341], studies show that it always comes far behind other factors in terms of importance for retention. In addition, the importance attached to CPD for retention varies with age, gender, career stage, duration of rural experience etc [2, 342].

Another intervention, Distance Education leading to additional qualifications, is also increasingly being used [284, 339, 343-348]. It provides rural health workers a chance to upgrade their qualifications while remaining on-site to deliver services, thus minimising time lost in travel, away from family, away from the post etc. It is also cheaper for both the provider and the participant than face-to-face full-time interaction. Similar delivery modes are used to deliver Distance Education as for CPD [340]. Materials may be sent to the participants in hard copy or in form of CDs, or the participants may be linked to the facilitators by internet connection e.g. skype or other video-link. In terms of effectiveness at retention, Distance Education has had significant success in retaining health workers in rural places in a few reported cases. For example, in Norway, a postgraduate course offered to physicians in a very remote area by Distance Education ensured that staff remained in post throughout the training and 65% were still working in the same place five years after the course [343].
3.3.2 Regulatory interventions

Many countries use regulatory interventions to ensure that health workers serve in rural and remote areas. Some regulatory interventions are stand-alone policies while others are used as back-up policies or policy levers for other interventions. The commonest regulatory policy to ensure increased numbers of health professionals in rural areas is mandatory requirement of rural practice. This is usually applied to doctors. There are several policy levers applied to ensure compliance with this policy. The commonest levers include: withholding the award of the degree qualification until after mandatory rural service [289] (the students are not considered to have completed the course); withholding academic certificates and registration until after a stipulated period of rural service [349-350]; payment of a large fine in lieu of rural service (“pay-out”/“buy out”), as in Thailand [321]; pre-condition to obtain a permanent resident visa e.g. in USA [187, 351]; pre-condition to be eligible to provide national Medicare services by foreign-trained physicians e.g. in Australia [286]; pre-condition to be eligible for postgraduate training [352]; mandatory bonding for rural practice after obtaining a scholarship e.g. graduates of Jichi Medical University in Japan [277]; pre-condition to get a government job e.g. in Indonesia, health workers who complete mandatory rural practice are given government jobs which allow them a lot of free time to do private practice [82, 321]. The interventions are summarised in Table 3.3.

The duration of mandatory rural practice varies and ranges from one year in most countries, three years in Indonesia [353] to 10 years in Australia. Even in Australia, the mandatory duration varies with the degree of remoteness of the area where the health worker is posted. The more remote a health professional accepts to work, the shorter the duration of the moratorium is [354]. This is made possible by the fact that Australia has a national system for classifying remoteness, the Australian Standard Geographical Classification – Remoteness Areas (ASGC-RA), whereas many developing countries do not have such a system. Although regulatory interventions lead to retention, studies have shown that while they work in such rural locations, the health workers are usually very dissatisfied with the conditions [188] and tend to stay strictly for the mandatory bonding period and to
leave rural areas for urban areas upon completion of their bonding [187-188, 355-356]. This raises questions about the worth of the heavy community investment in keeping them.

### Table 3.3 Regulatory interventions

<table>
<thead>
<tr>
<th>Policy</th>
<th>Target cadre</th>
<th>Policy levers</th>
<th>Where applied</th>
<th>Known effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandatory rural practice</td>
<td>All new graduate physicians / doctors</td>
<td>Withholding the degree award</td>
<td>India [357],</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Withholding academic certificates and registration</td>
<td>Japan [277]</td>
<td>“Non-physician communities” reduced by 73%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Refunding the fees</td>
<td>India [289]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Payment of a large fine</td>
<td>Thailand [321]</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Withholding appointment to a government job</td>
<td>Indonesia [353]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Permission to do postgraduate training</td>
<td>Vietnam,</td>
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<td></td>
<td></td>
<td></td>
<td>Mongolia,</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Thailand [352]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>“Buy out” (full or partial)</td>
<td>Several</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>countries [289]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Foreign nationals</td>
<td>Withholding permanent residence visa</td>
<td>e.g. J-1 visa in USA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Withholding access to certain health care markets</td>
<td></td>
<td>e.g. 10-year moratorium in Australia [354]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Foreign-trained citizens and foreign nationals</td>
<td>Withholding practice licence</td>
<td>USA</td>
<td></td>
</tr>
</tbody>
</table>

#### 3.3.3 Financial interventions

Financial interventions are probably the most widely used approach to retain health workers in rural areas [358]. However, their effects on retention are also not well documented. Most of the financial interventions for retention are extensions of those used to attract health workers to rural practice. Thus, better salary, special allowances and salary top-ups are used by several developing countries [72, 75, 102, 321-331]. Several developed countries use the student *loan forgiveness*
facility, whereby the new employer pays off the health worker’s student loan to the
government or training institution in return for rural service for a stipulated period
[318, 359]. In the US state of Minnesota, loan forgiveness programmes have very
high rural retention rates for several cadres of staff [360]. At national level, some
governments bond their health workers if they received government sponsorship
for their education [292, 298, 326, 361-362] e.g. in Uganda, nurses and midwives
who received a scholarship are being bonded to serve in hard-to-reach areas for
some years [363]. At local level, many health facilities which provide a scholarship
also use the same approach. Several institutions, especially faith-based
organisations also use better salary through secondment and top-up. This was
observed in several countries e.g. Uganda, Chad, Cameroon and Tanzania [364], and
in Malawi [365-366].

Other countries give specific allowances (named “retention” / “rural” / “hard-to-
reach” / “mountain” etc) to their staff in rural and remote areas [72, 325, 329, 367].
Several countries provide support for health workers to take long-term loans or
provide loan guarantees for the staff to take out loans for capital investments e.g.
purchase of cars, land or houses, or to pay tuition for post-basic education. Car
loans were offered in Zambia, to retain qualified health workers in rural areas,
although their uptake was low 11 [327]. Similar loans were requested in Swaziland
[368]. Some countries offer terminal benefits computed on the basis of the
duration of rural service. In Zambia, the rural retention scheme computed doctors’
terminal benefits at the rate of the salary of one month for every year served in the
rural area [329]. However, like the other interventions, the effectiveness of financial
interventions in retention of health workers in rural and remote areas is still poorly
researched and probably limited [369-371].

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11 Uganda’s rural Bushenyi district guaranteed long-term loans taken by doctors to buy cars and
town plots. As a result, all its seven Health Sub-Districts (HSDs) were staffed with doctors, thus
improving its performance on the District League Table (DLT) in the Annual Health Sector
Performance Report (AHPSR).
3.3.4 **Personal and professional support interventions**

Support-related interventions are of two broad types i.e. those that seek to support the individual’s private personal interests and those seeking to improve the living and working conditions to enable the health worker to live an agreeable personal and professional life in the remote area. Interventions for personal support generally deal with the family of the health worker. Studies have shown that if the family of the health worker is dissatisfied with the location or the community, then the health worker will not stay for long [372-373]. Therefore, efforts to address the needs of his/her family must be part of the retention package. The most critical needs are those of the children and the spouse/partner. Children need good schools, play areas and a safe environment. Spouses often need jobs and company free of local conflict. Therefore, the interventions that have been effected include payment of tuition for the health professionals’ children, as was seen in Zambia [327-328, 374], establishing good schools in the rural areas and staffing them adequately [26, 373]. Further support includes assisting to obtain a job for the spouse [114, 326, 372-373, 375], creating networks of spouses of rural health workers e.g. the Rural Physician Spousal Network (RPSN) under Alberta’s RPAP [376] and providing opportunities for the health worker to integrate into the social life of the community. At this level, the host community has a big role to play in obtaining the necessary facilities [115, 209, 377-381].

Governments also provide psychosocial support to the rural health practitioners [382-384]. For example, studies have shown that the rate of suicide in physicians is two to three times higher than that in the general population [385-386]. In the USA, physicians have the highest rates of suicide among all professionals [387] (about 400 per year, an equivalent of one medical school [388], or more than one suicide per day). Nursing is also one of the professions with the highest of rates of suicide [389]. In addition, studies show that the rate of mental ill-health, especially depression, the precursor to suicidal ideation, suicide attempt and completed suicide, is highest among rural doctors because they usually do not have anybody to notice their condition and to care for them [383-384, 386]. Therefore, several countries have made efforts to support psychological and social support to health
professionals in rural areas. Some Australian regional governments provide cognitive behavioural coaching, which has reduced stress among rural health professionals and increased their retention. After three years, one programme led to reduction in intention to leave among 40% of the participants and a 14% difference in retention rate of the treatment group compared to the controls [382-383]. Several countries have also created social support networks at the workplace and at regional levels for health workers and their spouses so that they do not feel isolated or the only ones in that kind of environment [390-394]. The networks hold regular meetings and give awards for long-serving staff.

There are interventions aimed at addressing the working conditions and the performance of the health worker, by offering professional and organisational support [395-396]. One of these is improvement of the health workers’ living conditions, such as the official residence. This is often done through construction of new houses, renovation or other improvements on existing houses e.g. by providing solar power and other simple amenities, as in Zambia [327-329, 374]. Other interventions include full payment or subsidising the health workers’ relocation expenses [397-400], [367] etc. The second sub-type of interventions aims at improving the conditions at the workplace, by creating what has been termed “positive practice environments” (PPE), i.e. settings that promote decent work, productivity and excellence at work [401-403]. The interventions include: full or partial payment for professional indemnity and medical error liability insurance for the health worker [404]; provision of appropriate equipment and supplies [405]; and strengthening the management of the health facility [406].

The third sub-type of support comprises of interventions to support the professional growth of the rural health workers. Several countries have programmes for outreach support to the rural and remote health professionals by consultants and other specialists from a regional level. Such support may be delivered by actual physical visit e.g. Australia’s Medical Specialist Outreach Assistance Programme (MSOAP) and Fly-In-Fly-Out (FIFO) visits [407-413], or by telemedicine methods using information and communication technologies (ICT) such as telephone, skype, videoconferencing, e-mail, or radio-call [409, 414-417]. The support visits may be to
individual health workers at their place of work or at a regional level. In Uganda, one approach to on-site visits is the “surgical camp” organised by the local association of surgeons or gynaecologists and facilitated by the Ministry of Health [418]. The camp is a period of 1 – 2 weeks during which a selected team of specialists visits a regional or rural hospital upon prior arrangement with rural health workers of lower qualifications and experience in that area, to teach them how to handle complicated cases. The rural health workers identify the complicated elective cases in advance and give the patients appointments to come when the specialists are around.

Typically, the organisers announce the coming camp to the community on local FM (frequency modulation) radios for some time, inviting patients with specific conditions, depending on the focus of that camp. They also invite health workers interested in surgery [409]. The specialists conduct the surgery while teaching the rural junior staff. The camp rotates from region to region. Such camps have covered general surgery, paediatric surgery [419] and gynaecological cases, especially vesico-vaginal fistula (VVF) [420]. However, although its effectiveness in transfer of skills in surgery and anaesthesia, providing free access to advanced care and cost-reduction have been appreciated [418], no studies have been conducted to identify their contribution to staff retention in rural and remote areas. Yet, many health workers report, anecdotally, to have stayed because of the confidence acquired through the camps. A related approach in Uganda is the Area Team Strategy, in which teams of senior people from the Ministry of Health or regional hospitals visit health workers at lower levels for supportive supervision [421]. Again, no studies assessing its contribution to retention have been published.

Some countries have *locum tenens* support programmes that provide a temporary replacement health worker to relieve the rural colleague to attend to family issues or professional development issues [422-423]. Yet, others have created *professional support networks* of health workers that bring rural health workers together, to avoid the rural health workers feeling a sense of professional isolation, and to obtain technical support in times of emergencies [391, 393, 413, 424]. One example of such a network of rural practitioners is WONCA (World Organisation of Family
Doctors) [425] whose purpose is to mobilise and provide support for the technical development of the profession of Family Medicine and the practitioners, most of who are located in rural and remote areas. In addition, countries have encouraged and supported the creation of *workplace-based social and technical support networks* [390, 392, 426].

In addition, several developed countries have created *hubs of experts* at regional level who are accessible to remote health workers by telephone and video links. Use of such arrangements has improved care outcomes and motivated rural health workers, as well as saving money for the local communities and improving staff retention [415, 427-431]. Other countries have instituted *strong evacuation services* for critically ill patients, thus easing the pressure on health workers in very remote areas. Others have established emergency services by telemedicine, the so-called “*tele-emergency*” which is also reported to have increased health worker retention in remote areas [432]. Several countries have also adopted mechanisms for *flexibility in working hours* [16, 390, 433-436] to allow staff members who have domestic responsibilities e.g. breastfeeding, or taking and picking young children from school, or to attend to other family or professional concerns.

The fourth sub-type of support includes interventions in which governments or other partners offer *direct technical support* to the rural health workers. For example, in the USA where health services are largely dependent on private providers, the Robert Wood Johnson (RWJ) Foundation provided funding to recruit experts in Practice Management. They posted them to the practices of rural health professionals in the rural areas under the Southern Rural Access Program (SRAP). This ensured that the private practices of the rural practitioners became financially viable and did not collapse, thus motivating the health professionals to remain in rural areas [437]. The fifth type of support is the *equipping rural health workers with advanced technical skills* that allow them to manage the wider scope of cases they come across correctly and confidently. Several countries provide skills enhancement programmes (e.g. the *Advanced Procedural Skills* programmes) for rural GPs, e.g. in Alberta, Canada [328, 413, 438-440]. The sixth and final type of support is that of career growth through *rapid promotion*. Some countries
guarantee the health workers of promotion after a given rural service period e.g. in Chile, Ghana, Zambia and Mozambique [295, 329, 441-442].

This section has described a large collection of interventions used to retain health workers in rural and remote areas in many countries. However, the designs, implementation processes, costs and effectiveness at retention are not well described in the literature. Most of the interventions have not been evaluated. Since some of them have been applied in developing countries, it suggests that they are affordable. In many cases, the process that leads to retention in a rural area starts very early in the health professional’s life. Therefore some interventions to retain health professionals are relevant and applicable at an early stage, even before the prospective health worker joins the health training institution. Others are applicable during professional training, at the time of recruitment and during practice. This so-called “rural pipeline” is long and often has “leaks” along the way (see Fig. 3.1, page 60), thus explaining why there is a shortage of qualified health professionals in rural and remote areas of virtually all countries. The interventions applicable at the different stages of the pipeline can be depicted diagrammatically as shown in Fig. 3.2:
<table>
<thead>
<tr>
<th>Level</th>
<th>Premedical school</th>
<th>Medical school (Undergraduate)</th>
<th>Medical school (Residency)*</th>
<th>Placement and retention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predisposing factors to rural retention</td>
<td>1. Rural origin</td>
<td>1. Strong institutional mission to serve underserved areas</td>
<td>1. Government policy supportive of rural health</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Rural stay</td>
<td>2. Government medical school</td>
<td>2. Receptive community</td>
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<tr>
<td></td>
<td>3. Rural family</td>
<td>3. Strategic plan to expand medical school</td>
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<td></td>
<td>4. Adventist religion</td>
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<tr>
<td></td>
<td>5. History of volunteering</td>
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<tr>
<td></td>
<td>6. Intent to practice Primary Care</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>7. Older age on entering medical school</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. Being in home state</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interventions</td>
<td>1. Exposing health professions to high school students</td>
<td>1. Purposive selection or rural origin students</td>
<td>1. Rural residency</td>
<td>1. Mandatory rural practice</td>
</tr>
<tr>
<td></td>
<td>2. Career guidance to high school students</td>
<td>2. Affirmative action points for rural origin students</td>
<td>2. Advanced procedural training</td>
<td>2. Financial incentives for rural practice (salary, allowances, loan repayment etc)</td>
</tr>
<tr>
<td></td>
<td>5. Science teacher enhancement</td>
<td>5. Direct personal support (financial, academic)</td>
<td></td>
<td>5. Professional support (supervision, CPD, telemedicine, locum support, practice set-up support, practice management support, etc)</td>
</tr>
<tr>
<td></td>
<td>6. Rural content</td>
<td></td>
<td>6. Social support (spousal networks, rural professional networks, integration into community etc)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Rural curriculum</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>8. Rural clerkship</td>
<td></td>
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<tr>
<td></td>
<td>9. Rural preceptors</td>
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<tr>
<td></td>
<td>10. Rural-oriented courses (Primary Care, Family Medicine etc)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>11. Rural medical school</td>
<td></td>
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<tr>
<td></td>
<td>12. Rural university</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Source: Modified from the American Academy of Family Physicians, 2007, [201] by including additional interventions. All the factors applicable to undergraduate training are also applicable to resident training.

Fig. 3.2 Predisposing factors and interventions to retain health workers in rural areas along the "rural pipeline"


3.3.5 Single vs bundled retention policies

Most countries tend to use multiple interventions carefully woven together as a “bundle”, rather than single policies [299]. Other than for reasons of resource limitation, single policies are not recommended unless they can be confirmed as a “best practice”. Several developing countries still apply single policies. For example, Uganda has been applying single interventions serially rather than bundled for a long time. Interventions such as Lunch Allowance [66], came alone. It was followed by a Hardship Allowance [72] 21 years later, although there were multiple salary increases and revisions of other emoluments in the intervening period [67]. Then, a higher salary for working at lower levels (labelled a “Retention Allowance” [75]) came after another three years. Mandatory rural service is planned to come after a couple of more years [73]. Although the effect of the single interventions was not measured, it is understandable that such interspersed application of potentially effective interventions renders them ineffective or less effective, ultimately. Thus, it is best to apply them as a bundle at the same time so that they can maximise each other’s synergies [26, 77, 196, 208, 332, 443-450]. A bundled approach was shown to increase the retention of psychiatrists in rural Australia from 18 months to 4 years [451]. However, there are arguments that a bundled approach makes it difficult to pinpoint the active ingredient during evaluation, for purposes of cost-effective replication as a “best practice” [452].

The size of the bundles varies from country to country and depends on the purpose of the intervention. In Zambia, for example, the bundle of retention interventions was large. It had 10 elements (Fig. 3.3) which were staggered along the length of the rural pipeline starting from the completion of the first degree. In other countries, interventions cover the entire length of the pipeline. Therefore, while bundling may be the ideal approach for some contexts and moments, interventions can also be strategically sequenced (or staggered) depending on the objective of the entire policy. In sequenced approaches, the beneficiaries are targeted with a different intervention at different stages of the pipeline, and yet all remain integrated and synergistic [390, 453]. However, there are also counter arguments that the application of policies should depend on the suitability of the context, such as the
performance of the economy, and the right moment of a “policy window” [454-455] and that, therefore, bundling of policies should depend on these rather than being an automatic practice.

The Incentive Package of the Zambia Health Worker Retention Scheme 2003-2004

1. The employee will serve a fixed period of 3 years in the rural area.
2. The employee will receive a salary equivalent to his/her substantive grade as provided by the Ministry of Health/Central Board of Health.
3. The employee will be paid an additional rural hardship allowance equivalent to Euro 200 per month for category C and Euro 250 per month for category D districts*.
4. The Central Board of Health will pay an education allowance of Euro 1350 per year per natural child (aged 5-21 years) maximum of 4 children per contract upon submission of receipts.
5. The Central Board of Health will provide funds equivalent to Euro 2500 per contract to the benefiting District Health Board to renovate/upgrade the accommodation of the employee, upon submission of an acceptable housing plan.
6. The employee will be eligible for post-graduate training in the relevant postgraduate course at the expiry of the contract.
7. The employee shall accumulate an equivalent of 3 monthly rural hardship allowance per contract year worked, after a minimum of 3 years deployed in a category C or D district. This support will go towards postgraduate training.
8. The employee shall be subjected to annual appraisal of performance and identification of training needs for capacity building.
9. The employee will be entitled to a loan (for e.g. a car or a house), maximum of 90% of the 3 years rural hardship allowance and eligibility will be after 6 months of service under the contract.
10. By signing the contract, the employee agrees at all times to competently, faithfully and diligently perform such duties as the Central Board of Health may from time to time require, assign or order the employee to perform and shall do the utmost of his/her ability to promote the interest of Central Board of Health in its implementation programme of the Health Reforms


*The categories of the districts reflected the degree of rurality

Fig. 3.3 : Key Elements of the Zambia Health Worker Retention Scheme

3.3.6 Multi-sectoral and community interventions for retention

It has also been observed that some of the proposed interventions fall outside the scope of the health sector and, thus, require multi-sectoral collaboration and collaboration with the community [26, 295, 332]. In Zambia, where most rural health workers rejected a car loan because of poor roads [327], improvement of the road network in rural areas has been proposed, as a way of improving their morale [456]. In Japan, for example, the Jichi Medical University is funded 50:50 as a collaborative venture between the national and local/regional governments [277]. In some countries, the host community has also been involved in the processes of
determining the needs, selecting and convincing their prospective health professionals and in preparing the reception of the health workers into the community [377-378, 457].

Community involvement facilitates faster and deeper integration of the health worker and his/her family in the community. To facilitate this, some states in the USA hold Medical Fairs in which prospective health professionals meet with community members to know each other’s expectations and to select the community in which to work. For example, in the state of Georgia, all the recipients of a state scholarship and who are bound to work in a rural area, are invited to attend such fairs, during which they meet with community members and other potential rural health workers, so that they do not feel that they are alone [458]. Some programmes, such as the Rural Physician Access Program (RPAP) in Alberta, Canada, organise pre-visits to enable prospective rural health professionals and their families to make an informed choice. During such visits, particular attention is also paid to the interests of the spouse/partner/"significant other" of the prospective candidates. The RPAP has also bought houses and kept them on standby for such visitors and new physicians to use for some months until they get their own accommodation [458-459].

Other programmes focus on building the general capacity of the communities to market themselves, in order to be able to attract, recruit and retain health workers. The so-called “Recruitable Community Projects” are interdisciplinary and very innovative, helping to build the economic ability of the community to sustain health workers, and their social amenities to satisfy their non-financial requirements [457]. For example, the Recruitable Community Project in West Virginia, USA, raises local awareness on how to develop the community to make it attractive for new providers [457]. It encourages broad-based development to cover all the areas that are known to be requirements for health professionals, such as education, entertainment and other general community development investments. The project takes the community through a formal process with different stages. Early results of the process reported impressive success at increasing recruitment and retention of health workers in rural areas (7 trained communities recruited 27
physicians within 1 year of training) [457]. The Nuestra Communidad, Nuestra Salud project in the US state of Arizona prepares the community to be a suitable site for practicum training of medical, nursing and pharmacy students who eventually return to practice in the same community [460].

3.3.7 Other recommended interventions

In the literature, there are other interventions that can also increase the retention of health workers in rural areas which have been recommended after the WHO model was published, although there is so far no evidence of their effectiveness on retention. For example, Appiah-Denkyira et al. [461] recommend raising the retirement age of health workers, providing contracts to retired staff, giving educational opportunities to staff in rural areas to do specialist training (which is a major reason for not going to or leaving the rural areas), partnership with training institutions to provide on-site training to staff in rural areas, emphasising producing more of low and mid-level cadres who are not internationally marketable, improving the supply of equipment to facilities in the rural areas, etc. Also of interest to this study is that they recommend that training institutions and ministries of health should strengthen their positive association with rural health workers and inculcate it among their students, and to communicate widely about altruistic motives in health care [461]. Earlier, both Kamien et al. [462] and Hunt et al. [463] had found no significant negative effect of urban physicians’ “badmouthing” rural practitioners and rural-oriented courses on students’ choice of rural careers. Nevertheless, the recommendation by Appiah-Denkyira et al. is pertinent for increasing student interest in rural careers.

The WONCA Working Party on Training for Rural Practice also recommends multiple interventions [464-465]. Those additional to what has been seen already require medical schools to take up a bigger corporate social responsibility for health in their regions through the way they train their students etc. Several countries have considered this recommendation and started adjusting the training of their students to respond to local needs. In Africa, the PEPFAR-funded Medical Education Partnership Initiative (MEPI) is an intervention that supports selected medical
schools to produce health workers who are adaptable to the rural conditions of their countries, mainly through rural community clerkships [266-267].

Not many studies confirm which interventions actually retain health workers in rural and remote areas. This stems partly from the fact that the implementers of interventions are policy makers, more interested in seeing action on the ground and public approval than on the processes. This is especially true for politicians, who normally have a limited time in office. Rigorous designs take time to perfect, implement and evaluate, and policy-makers do not always have that time. A recent study showed that top-level policy-makers, like ministers of health, last only 3.9 years in office, including the orientation period [466]. There is hardly time to wait for rigorously-designed policies or to read well-written reports [467]. To circumvent this lack of evidence, researchers have, instead, conducted studies to predict the incentives that could attract health workers to rural areas and those that could retain them there. It is the results of these studies that are currently used to shape policies on both attraction and retention.

Early studies identified incentives and certain personality traits as being the most important factors that could determine which health workers go to rural areas. Chomitz et al. [353] used a Discrete Choice Experiment (DCE) to study which incentives could attract health workers to rural areas of Indonesia, by looking at both their stated and revealed preferences. Theirs was one of the first applications of a DCE, predominantly used in marketing, to determine appropriate incentives in health. Serneels [468] et al. later showed that personality and background could also influence the choice of rural practice. In particular, Serneels et al. pointed out the importance of intrinsic prosocial motivation in choosing rural practice. These studies spurred expansion of the scope of investigation.

In recent years, DCEs have been used to identify the incentives that could attract health workers to rural areas in several other countries such as South Africa [469], Uganda [470], Lao People’s Democratic Republic [471], Liberia [472], India [473], Tanzania [474], Ethiopia [475], Ghana [476], Vietnam [477] and a multi-country study involving Kenya, South Africa and Thailand [478]. Although they may appear
to be theoretical, DCEs have a reasonable scientific basis in Choice Theory\(^\text{12}\) and can be used by policy makers to design new policies or reframe existing ones by knowing health workers’ preferences. They are increasing being used to model incentive packages [480]. One study has even attempted to show the cost implications of the selected scenarios of interventions identified with a DCE [481]. Given their growing importance in identifying the attractive incentives, the WHO has produced a guide for users on how to set up DCEs [482].

To attract and retain staff, current DCEs generally indicate financial incentives, provision of better housing facilities [478], preferential options for specialist training [478], faster rank promotion [478], a reasonably good benefit package [478], and a change in workplace culture from hierarchical to relational management [478] as the most important interventions. Others health workers could be attracted by working in a hospital, not a health centre (true for nurses) [483], medical insurance coverage for family (true for nurses) in [483], being allowed to work near the home province (true for doctors) [483], being guaranteed an opportunity to specialise (doctors) [483], and receiving a maintenance allowance for uniforms [327]. Some researchers have also recommended the design of stand-alone policies specifically meant for recruitment and deployment of staff in rural areas, because they are currently lost within broader policies and eventually crowded out [312]. The presence of a stand-alone policy specifically focusing on recruitment for rural areas would give the problem visibility on the policy agenda of governments.

On retention, studies have identified that the following factors could also retain health workers in rural and remote areas: pay per consultation [484-485]; improved after-hours on-call arrangements [484-485]; good leadership and supervision skills by the managers [485]; possibility of promotion opportunities [485]; provision of a

\(^{12}\) Choice Theory is a broad theory in economics, which explores the factors that influence the choices of customers. One component of choice theory, Consumer Theory, states that when customers choose a product, they decide on the basis of a few characteristics of the entire product. Varying the characteristics could influence choice. Consumer research tries to identify those specific characteristics that definitively influence choice. DCEs use this concept to vary the characteristics of a rural job, to see which ones can attract health workers. 479. Lancaster, K.J., A New Approach to Consumer Theory. The Journal of Political Economy, 1966. 74(2 Apr., 1966): p. 132-157.
specific allowance for rural areas [485]; good infrastructure and the necessary technical resources [485]; and CPD opportunities [485]. Adjei et al. [486-487] found that, in Ghana, the importance attached to retention factors differed by cadre (doctors and pharmacists preferred professional skills, and administrative positions, while nurses and clinical officers preferred better salaries and other material incentives). Blaauw et al. [478] also found that not only does the degree of importance attached to various interventions vary by cadre, but it also varies by country and by region. The importance attached also varies by age. Among Chinese rural doctors, retirement and pension arrangements could encourage rural doctors to stay longer in the rural areas. This was attributed to age, because rural doctors were older than the average doctor in China [488]. Better salary was considered in second place.

Moreover, applying a single intervention could have different effects compared with applying a bundle of interventions. For example, among South African nursing students, applying financial incentives alone or non-financial incentives alone generated interest in rural areas among only 75% of the participants in a DCE. However, a combination of both raised those interested in a rural job to 85% of the participants [469]. In Ghana, other factors that could work to retain health workers in rural areas included special career incentives like exposure to specialists e.g. by having the specialists make rotations in rural areas; seat reservation for post-graduate studies (i.e. a guaranteed position) and special monetary incentives e.g. salary top-ups [441]. In USA, telemedicine could increase interest in being retained in a rural area, but many states were afraid of applying it for emergency care for fear of litigation because the Emergency Medicine specialist is not on site [432]. Their law on medical emergencies, the EMTALA (Emergency Medical Treatment and Labor Act), requires that whichever physician is contacted must be present to evaluate a patient physically [489], which is not possible with telemedicine (tele-emergency) [432].

Mentoring could also work as a retention strategy [413]. A literature review revealed four models of mentoring that could be applied to increase the likelihood of rural retention. In the cloning model, the rural mentor tries to develop the
mentee into a “clone” of himself/herself. In the nurturing model, the mentor creates an open environment to enable the mentee to learn. In the friendship model, the mentor takes the mentee as an equal and friend and they provide mutual support. In the apprenticeship model, the mentor retains a superior role to the mentee, and guides him/her, but once in a while on some tasks, may apply any of the other three models [490]. Another strategy that has been found to work in preliminary retention studies but that needs further exploration is to conduct rural residency training in primary care hospitals. In the USA it has been tried in Critical Access Hospitals, which are the much smaller and rural hospitals [491]. In that model, the entire postgraduate (residency) training is held in a rural hospital, thus making the residents very familiar with rural environments, challenges and medical conditions by the time they complete their studies.

Another innovative strategy that was reported to be effective at increasing rural retention is the development of regional Retention Work-Plans. In Canada, the Alberta region’s Rural Physician Action Plan (RPAP) is a major action plan with a specific component on retention of the rural physicians. It covers the entire length of the rural pipeline. Its components include significant funding for rural clerkships and other forms of rural medical education; use of “Skills Brokers” who conduct Training Needs Assessments (TNA) of the rural health workers and organise CPD training for them; appointment of a rural retention committee; and conduct of satisfaction surveys among rural physicians, among others [492]. Several countries and programmes also use recognition and appreciation as an important component of their retention programmes. In South Africa, rural doctors also emphasised the importance of recognition and appreciation by their authorities as important for their satisfaction and retention [406]. The Canadian RPAP also gives regular awards to retained health workers for different achievements [492].

Several programmes also have components to train prospective rural health professionals on survival skills for living in rural areas. Some have incorporated this as part of the residency training [493]. Rural exposure during residency helps to moderate their expectations of rural life and facilitates their integration upon starting rural practice. Significant attention is increasingly paid to the importance of
socio-cultural integration, especially if the health worker does not originate from the rural area where he/she is working. Therefore, the community has an important role to play in ensuring the integration and retention of rural health professionals [115, 209, 494].

3.4 Modifiers of the effect of interventions on successful retention

Even with the interventions in place, some health workers fail to be retained in rural areas. However, research has shown that if certain factors are present, they modify the effect of the interventions and make it possible to retain health workers. Some of these factors are personal characteristics while others are circumstantial. Personal characteristics include demographic characteristics and personality characteristics. Demographic characteristics that influence retention include age, marital status, having/not having children and the age of the children. In Australia’s New South Wales, young and elderly health workers were more likely to leave rural areas than the middle aged [122]. In Lebanon, marital status also affected retention (the married were more likely to be retained) [495]. However, the age of the health worker’s children modified this relationship. If the health worker had young children, they were more likely to leave than those who had no children or those whose children were already grown up [496]. Individual human characteristics (the psychological profile) e.g. temperament and character were also found to influence ability to be retained, with retained rural health professionals being generally those who are more self-directed, caring, cooperative, objective and persistent types [497-498].

From the rural pipeline perspective, effect modifiers also apply at different points along the pipeline, although most of them tend to apply during practice. Some studies found that if the rural job is the primary source of income for the health worker and provides a satisfactory basic salary, then the health worker is likely to be retained because of the relative comfort [499-500]. This further underscores the importance of financial interventions in terms of a higher salary and other financial additives in form of incentives. Another factor is the health worker’s level in the professional hierarchy. Russell et al. found that being at a senior level, at least Registrar in the practice, increases chances of rural retention [499]. Lower level
staff had shorter durations of retention. These two observations can be understood to be related to the level of personal investment in the practice and the income thereof, and in terms of level of feelings of responsibility. In the same study, contract staff and salaried staff also had shorter retention than clinic owners and their associates, suggesting that security of tenure could be an important predictor of retention.

Other factors found to favour rural retention were: doing hospital clinical work [499], working longer hours per week [499], feelings of workplace safety [500], geographical restrictions on practice location [499], ability to get a locum tenens [501], possibility of group practice (to reduce workload and to be able to consult with colleagues) [501], possibility of CPD [501], size of the community served – the larger the community, the higher likelihood of retention (because of the higher chances of financial viability of the practice) [381], availability of entertainment facilities [381], lower rurality score (in other words, rural but not very remote) [381], rural medical education – rurally-educated graduates stay longer [228].

In another study, community factors, especially appreciation, connection, active support, and physical/recreational assets were also found to increase retention [115]. The timing of CPD was also found to be essential in influencing retention. In South Africa, CPD offered during the period of compulsory community service was found to be important in influencing doctors’ choice to stay in rural areas because they felt confident of their ability to handle cases in the rural areas [502]. In addition, the timing of the release of information about rural posting was important for the decision to work in rural areas. Being informed of a rural posting when the health worker was still in a rural area doing community service encouraged the “Comfort Zone” syndrome, with the participants choosing to stay in the rural areas where they were than to shift and start looking for jobs [502]. This worked particularly well if they were posted to the same place where they were already working. In addition, support from the institution [452, 503], awareness and understanding of rural challenges before arrival [452] were also found to increase retention.
Additional factors included having the opportunities for professional growth, especially because rural health professionals could do more and become “expert generalists” due to the common relaxation of restrictions on the scope of practice in rural areas [452, 495]. Job security [503], the degree of control and responsibility on the job [495] were also found to influence the choice of staying in a rural area. Having no plans for further studies was also found to increase retention e.g. among Lebanese nurses [495]. Other incentives that increased retention were positive intrinsic incentives e.g. feelings of autonomy in practice and strong connectedness in the community and positive extrinsic incentives e.g. attraction to a rural lifestyle, and preference for a diverse caseload [504]. The factors that negatively affected rural retention include negative extrinsic incentives e.g. isolation, lack of access to professional development and negative intrinsic incentives e.g. burnout [504].

3.5 Caution on interventions

While there are many possible interventions to attract health workers to rural areas and to increase rural retention, caution has to be taken in their choice and implementation. They could fail or have unintended consequences, some of which could even be negative. In Swaziland, in 2009, a non-government project, Health Systems 20/20, deliberately and rigorously applied an intervention to improve the working conditions of the health workers at their workplace, with no component for the direct and personal benefit of the health workers. It randomised health facilities into intervention and control groups and provided adequate equipment and supplies but did not give personal support like allowances. It introduced competition and other performance initiatives. At evaluation after one year, evaluators concluded that the intervention did not improve intention to stay. They concluded that supply-side only interventions may not improve retention [505]. Therefore, in the making of any bundle of interventions, policy makers should make a judicious balance between supply-side and demand-side interventions.

In Newfoundland and Labrador, Canada, enforcement of obligatory rural service before licensure did not increase retention of local physicians or international medical graduates (IMGs) [355]. As soon as they finished their mandatory rural practice, they all left the rural areas, and the communities had to start the search
process afresh. Therefore, it is probably better that choice of rural practice is individual rather than mandatory. In Ghana, when the government tried to stop its long-standing big problem of emigration of health professionals, it came under pressure from physicians calling for an improvement in their local working conditions. Following the pressure, the government implemented a generous bundle of interventions to motivate them and stop their emigration. The most prominent of these was the Additional Duty Hours Allowance, ADHA, an amount paid for overtime work. However, given that the entire bundle was very rich and costly to the economy, it was offered to doctors only. This brought negative feelings against doctors among fellow health workers and the general population, led to a nationwide strike, and increased the emigration of nurses [506-508]. Almost similar problems were encountered in South Africa where an incentive intervention unearthed significant weaknesses in the national health policy. It is only after the incentive was put in place that the government realised that it did not even have a definition for “rural”. The intervention has stoked divisions among the health professionals [325]. This occurred some years after a similar policy (the Occupation-Specific Dispensation, OSD) meant to increase nurse retention and stop their migration had faced the same problems.

The OSD offered nurses a better salary and benefit package out of their ordinary scale in order to motivate and retain them within the country. It brought feelings of unfairness among the nurses themselves and from other government employees [509], thus suggesting that health systems should put in place mechanisms to quickly learn lessons even from their own practices [509-510]. Such situations highlight the need for clear policies on who is eligible to receive what, if any, of the benefits that may be given in an intervention scheme. In Zambia, the Zambia Rural Health Workers Scheme was initially meant for rural doctors only [104]. However, it was soon found necessary to expand it to the whole country due to discontent in other circles. Targeted schemes have been tried in several countries such as doctors and nurses only, in Botswana [104], Nurse Tutors only, in Malawi [104], doctors only, in Ghana [506-508], nurses only, in South Africa [509-510] and doctors only, in South Africa [325]. However, the design of many intervention policies seems to
leave a lot to desire. Clarification of the rules of access to the benefits from the start is essential to maintain stability. However, interventions for other health workers should be put in place to avoid disruptive discontent and perverse incentives.

In Uganda, a recent intervention (a 250% salary increment, called the “Retention Allowance”) intended to retain doctors in the country and stop their migration was allocated to doctors who would accept to work in lower level health centres at the community level [75]. While it attracted many unemployed health workers, it also attracted many doctors from the hospital level to the health centre level, because the new salary was better than that paid to hospital doctors. Therefore, whereas the intervention was initially good for the community level, gaps in health service delivery quickly appeared because the doctors did not have adequate facilities to use at that level. This demoralised them. They also referred patients to the understaffed hospitals which now had lower capacity to manage all the referrals.

The doctors who remained at hospital level were overloaded and equally demoralised. Since most health centres do not have ambulances to refer patients, households had to incur additional ambulance costs. Eventually, most of the doctors at community level have since returned to the hospitals because there, at least, they can practice their profession. Therefore, they now work at hospital level, while receiving the health centre salary [75]. One of the underlying problems of the policy is lack of a policy document to guide its implementation. Probably some of these challenges would have been foreseen at policy design stage. The government probably had plans to raise the salary of hospital doctors, too, but this highlights the problem of sequencing interventions, instead of offering them as a bundle.

3.6 Conclusion

In this chapter, I have presented interventions to increase the retention of health workers in rural and remote areas, aware that retention is a result of the total personal experience, and not just interventions [511]. Countries choose interventions according to the nature of their health system and economy. Therefore, some interventions applicable in developed country health systems may
not be applicable or affordable in developing countries. However, others are transferable. The repertoire of possible interventions is large and a single country can even apply several interventions, upstream and downstream along the rural pipeline. The WHO classifies the interventions as educational, regulatory, financial or supportive. The interventions may be delivered singly as a “best practice” or as a policy bundle with several synergistic interventions for maximum effect [450]. However, the choice of what to implement depends on the circumstances peculiar to each country, such as the affordability, existing provider payment mechanisms and preferences of health workers in that country. Whereas evidence on the effectiveness of the different retention interventions is still little and weak, it is clear that some interventions have a positive effect, while others may have negative and unintended consequences. Therefore, their design should take into account the possibility of such consequences so that they are managed appropriately and in a timely manner. The next chapter presents the theoretical framework used for this study.
4 THEORETICAL FRAMEWORK: JOB EMBEDDEDNESS

4.1 Introduction

The preceding chapter described the interventions that have been applied to increase the number of health workers retained in rural and remote areas. The aim of the present chapter is to explain job embeddedness, the construct that I used as the theoretical framework for this study. I start by describing the construct in detail, including what it has been used for elsewhere. Then, I describe my postulates about its role in the retention of health workers in rural areas and how it influenced my outlook in the design and implementation of the study. I end with a critique of the construct and highlight the alternative competing frameworks that I considered before settling for job embeddedness.

Studies [444] have shown that some interventions, most of which are extrinsic, are effective in taking health workers to rural and remote areas. However, not all extrinsic interventions are able to retain them there [512-514]. There is little research published on intrinsic motives for choice of rural practice. The question, then, is what retains them there. The job embeddedness construct [29] offers a potential theoretical foundation for an explanation of staff retention. It could also be applicable to explain retention in rural and remote areas. Job embeddedness is based on well-known theories (Image Theory [515], and Field Theory [516]). It offers a chance to advance knowledge on the issue of staff retention, by offering a new perspective and shifting from looking at the problem from the angle of staff turnover to an angle of staff retention.

Job embeddedness is

“a broad constellation of influences on employee retention .... a kind of web in which one can become “stuck”…..” [29] p.7.

The construct was originated by Mitchell et al. in 2001 as a shift in focus from prior long-standing research on employee turnover [517]. They used it to describe the net influence of the multiple factors that affect individual employees’ personal considerations in decisions to leave or stay in their job. It represents a network or
mesh of links and interdependent connections in which an employee can get stuck or enmeshed and fail to leave a job [29]. They considered that an employee who stays in an organisation gets embedded in his/her social networks on the job and off the job, and concluded that such embedded workers are more likely to be retained in their jobs than non-embedded ones. Whereas the original application of the construct was on staff turnover from jobs, in the present study I extended the application of the construct to include location, by seeking to understand employees’ considerations about leaving a job in a specific location, the rural area.

Job embeddedness has three dimensions. The first dimension is the “Links” that an employee has. Links are the formal and informal connections, which may be psychological, economic or social, that a person or his/her family has with people or the physical environment at his/her workplace and in the community in which they live [29, 518]. Examples of psychological links include emotional attachment to an area e.g. love for fresh air, green environment, mountains, lakes, feeling of safety and security etc. Social links include having relatives in an area e.g. through having been born or raised in an area or being connected to the area through ancestry, marriage, faith or friendship. Economic links include having financial interests and investments in the area that generate additional income for the health worker. The number, nature, strength and closeness of the links determine the degree of job embeddedness. Some of the links are at the workplace and may be work-related or simply between the employee and colleagues at work, but others are in the community in which the employee lives and spends the social and non-work part of his/her life. The more and the closer the links that one has, the more embedded he/she is, and the more stuck and less likely to leave he/she is. In any organisation, people can become embedded in many different ways, such as through friendships, memberships of groups, and in any community, they can be linked through social relationships like marriages [29].

The second dimension of job embeddedness is “Fit” i.e. how well the job and community fit in the employee’s life-spaces as to be relevant to him/her. Fit is an employee’s perception of how compatible the job, organisation or community is with his/her values, goals, ideals and culture. Examples of such values and ideals
include work-life balance, career goals, attitudes to social and ethical issues etc. During recruitment, while employers take potential employees through an informal test of fit in the organisation, the candidates also take the organisation through their own similar test, to see if it fits them. The decision by the employers to offer a place (and that of the candidates to take up an offer) or to stay once an offer has been taken up, depends a lot on the results of this two-way “Compatibility Test” [519]. Studies have shown that those who have poor fit (“misfits”) do not stay long in a job or an area, hence the importance of identifying them even at the selection stage [29, 520].

The third dimension of job embeddedness is “Sacrifice”, the ease with which an employee’s links can be broken. It is a measure of the sacrifice an employee would have to make in order to break the links he/she has in that job or community [29]. Sacrifice refers to the perceived cost of material or psychological benefits that a person stands to lose by leaving a job [521]. Material sacrifice includes things like a good house offered at the workplace, good office space, means of transport, salary, other benefits, etc. Social sacrifice includes benefits like respect at the workplace and in the community, a position in the local church, a position or rights in the local charity or sports club, friendships at work and in the community etc. An employee weighs all these benefits against similar ones that he/she is likely to get in a new job and new community before making the final decision to leave or to stay [29, 517].

All these dimensions of job embeddedness exist both on-the-job and off-the-job [29, 31]. Therefore, there are links on the job (Links-Organisation) and off the job (Links-Community), fit on the job (Fit-Organisation) and off the job (Fit-Community), and sacrifice to be made on the job (Sacrifice-Organisation) and off the job (Sacrifice-Community). Analysing job embeddedness, thus, leads to a 3 x 2 matrix, as shown in Table 4.1.

Table 4.1 The 3 x 2 matrix of Job Embeddedness

<table>
<thead>
<tr>
<th></th>
<th>On the job (Organisation)</th>
<th>Off the job (Community)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Links</td>
<td>Links-organisation</td>
<td>Links-community</td>
</tr>
<tr>
<td>Fit</td>
<td>Fit-organisation</td>
<td>Fit-community</td>
</tr>
<tr>
<td>Sacrifice</td>
<td>Sacrifice-organisation</td>
<td>Sacrifice-community</td>
</tr>
</tbody>
</table>
4.2 Measurement of job embeddedness

It was surmised that an employee with strong links and fit on the job and in the community, and who will make a big sacrifice by leaving will tend to stay longer than one who has less of these, because he/she is deeply embedded on the job [29]. To measure the degree of job embeddedness, Mitchell et al. [29] designed a scale with 40 items gathered from psychometric tests used in previous studies on organisational attachment and turnover [522]. Although the items were already validated, Mitchell et al. validated them again for job embeddedness in terms of construct validity, internal consistency and reliability and confirmed their applicability in the new scale [29, 517]. The 40-item tool covers the content of the six cells of the job embeddedness matrix shown in Table 4.1 (page 93). The final tool is included as Appendix 6 (see page 332).

4.2.1 The 40-item tool

The tool captures data on the six dimensions of the job-embeddedness construct (Fit-Organisation, Fit-Community, Links-Organisation, Links-Community, Sacrifice-Organisation and Sacrifice-Community). Items on “Links” capture a few characteristics about the participant’s employment history (duration in the industry, duration in the organisation) and links in the organisation and community, using closed-ended questions. Other items capture data on the other dimensions of the construct using a 5-point Likert scale. They are derived from other previously validated attitudinal scales such as the Job Satisfaction Survey [523], Organisational Commitment [524], Job Alternatives survey [525], the Job Search Behaviour Index [526], Intentions to leave measure [527], and Voluntary Turnover, confirmed according to Maertz and Campion [528], that the management confirms that, at the time of termination, the employee still had the physical opportunity to continue employment at the organisation.

Some sections of the tool have closed-ended questions while others collect continuous numerical data, but the biggest part of the tool measures items using a 5-point Likert scale. The scale ranges from “disagree strongly”, on one end, through “disagree”, “neutral”, “agree” to “agree strongly” on the other. Various analyses
can be done on data collected with the tool. Like other Likert-type scales, the originators of the construct recommend that job embeddedness should be taken as a composite measure, using only one global score, in this case obtained by averaging the scores on the different component dimensions. It is not expected that the component dimensions should be necessarily, highly internally correlated with each other [519]. However, sub-analysis of the domains in the construct can also yield useful information regarding those aspects in which employees are most or least embedded, for purposes of intervention. Sub-analysis helps in planning interventions to improve employee retention, because it pinpoints the strongest and weakest domains.

For example, the aggregate scores on each domain can be compared individually across participants and give information about each of those cells. They can also be further aggregated to produce the overall degree of job embeddedness of the individual which can, in turn, be compared across all the individuals in the study. The overall degree of job embeddedness for an organisation or cadre can also be computed and compared across organisations or cadres, respectively. The standard practice of aggregation to produce a composite result is by averaging the scores on the component items. Therefore, the composite score for an individual is a grand mean combining results for all items of all the cells for that individual.

### 4.3 Why people stay: job embeddedness as a new focus

The traditional focus of turnover research was on why people leave [29]. Therefore, the decision to start focusing on who stays and why, challenged the traditional thinking about the staffing problem, by shifting away from looking at why people leave. The originators of the job embeddedness construct acknowledge that their decision resulted from their personal experience:

“...In 1995, Tom Lee, Terry Mitchell, and Miriam Erez joined the ongoing weekly conversations on turnover research. During these discussions, Lee suggested that they consider a switch from their (then) five-year focus on the unfolding model of turnover, and the group responded positively... He asked whether it might be more
interesting and useful to, instead, consider, why do people stay? ....
Mitchell ....had been at Washington since 1969, and Lee ....had been
at Washington since 1983. In jest, Mitchell then said that they knew
more about staying than leaving. ... Mitchell added that he stayed
...because of fit or comfort with the University of Washington and
city of Seattle, his many links to doctoral students and the
community (e.g., his accumulating seniority with Seattle Seahawk
season tickets), and the sacrifices that leaving entailed (e.g., forgoing
the accumulated Washington- and Foster-specific human and social
capital; hardships to his many doctoral students). At that moment,
the construct of what was later to be known as job embeddedness
was born”. [517] p.200

The decision also opened multiple new research possibilities. Previous research on
the turnover problem had been in two main streams: how employee attitudes and
availability of alternative jobs influence turnover intent [29, 522]. It had shown that
intention to leave (also referred to as “intention to quit” or “turnover intent”) was
the most direct antecedent of turnover and that the two most investigated attitude
models affecting turnover were job satisfaction and organisational commitment,
both of which consistently and significantly showed a negative correlation with
turnover [529]. The studies had shown that even satisfied and committed
employees quit their jobs, while dissatisfied employees did not quit [519, 530-532].
Moreover, previous predictors of turnover could explain only a small proportion of
turnover (satisfaction explained 3.6%, intention to leave explained 12.6%) , thus
leaving over 80% of turnover unexplained [32, 519, 529, 533-536]. Therefore, there
must have been other factors, especially off-the-job, responsible for their retention.
However, most of the previous research had focused on work-related factors as the
causes of departure or stay. Indeed, some studies [519, 529, 537-539] had shown
that off-the-job or non-work issues can be equally important in influencing the
decision to stay or leave, as in the personal cases of the originators of this construct
cited in the extract above [517].
Off-the-job influences on the decision to leave or stay include family and community attachments such as commitment to church, cultural or community responsibilities, personal hobbies and work-related requirements, the so-called “work-life balance”, especially if one has children and a spouse [29, 517]. Apart from off-the-job factors, studies had identified other on-the-job factors but which are not attitudinal, that were responsible for attracting and keeping people on their jobs. These included inducements to stay derived from an employee being attached to his/her team and co-workers at the workplace, rather than to the organisation [540-541]. Such “constituency attachments” include membership of trade unions, faith-related fellowships, charitable organisations e.g. Rotary or Lions clubs, sports clubs and other forms of association identified at the workplace. Some of them are related to the organisation and others are not. Their importance to retention is because the employee finds an entry point into such activities and social networks by being on the job. He/she stays on the job not because of commitment to the organisation but to the social groups. Therefore, it is clear that the influences on the decision to stay are many and go beyond the job and the organisation. The researchers concluded that, rather than attachment or commitment to just the organisation, the entire collection of these influences leads to a broader effect, which they termed “job embeddedness”. They postulated that it is this “job embeddedness” that reduces staff turnover”[29].

4.4 The role of job embeddedness in retention

The importance of job embeddedness in retention is in explaining the intricate processes that employees consider as “obstacles” to leaving an organisation. The obstacles may be on the job or off the job. The obstacles include the number and closeness of links that they have with people at work and in the community, the goodness of their fit into the job and the community, and the things that they have to give up if they have to leave. Breaking the links involves emotional challenges and loss of the “investments” that they have made in the organisation [542] e.g. acquiring new skills, some of which are specific to that organisation and not portable to other organisations, or loss of contact with their kin whom they would have assisted by being nearby [543-544] and [545] cited in [29].
Since its publication, several studies have employed the job embeddedness construct. Most have used it to predict the likelihood of turnover from organisations and confirmed that, indeed, job embeddedness is consistently and significantly negatively correlated with turnover intention i.e. the higher the degree of embeddedness, the lower the likelihood of turnover intention, thus confirming its predictive validity [32, 517, 522, 546-554]. In addition, employees with low job embeddedness have higher job search behaviour, which is one of the predictors of intention to leave [555]. Since intention to leave has been confirmed as the strongest predictor of actual turnover [529] and job embeddedness consistently predicts intention to leave, therefore, job embeddedness is confirmed to be a reliable predictor of turnover. Studies had shown that attitudinal factors such as job satisfaction and organisational commitment could explain some, but not all, retention [529], and that job embeddedness predicts turnover decisions more than them [32, 533-536]. Job embeddedness mainly focuses on contextual factors and finds that they explain more retention than attitudinal factors [29].

Interestingly, while the majority of the studies have found that the on-the-job component of job embeddedness is stronger than the off-the job component at predicting retention [521, 556-558], a few others find that off-the-job embeddedness predicts actual turnover behaviour better than on-the-job embeddedness [522]. Apart from turnover, job embeddedness has a predictive effect on other job behaviours such as performance [550, 559], innovation at work [560] and other staff attitudes in general [561], which eventually lead an employee to being recognised and satisfied, and to stay longer, even with a higher likelihood of being promoted. However, the exact nature of the predictive role of job embeddedness on turnover intention and actual turnover behaviour has not been studied widely. While there are many interventions to retain health workers, most research does not explain for whom and the conditions under which the interventions to retain health workers are more likely to work (i.e. moderators) or the how and why they work (i.e. mediators) [562-563]. Job embeddedness could be a mediator of some relationships and a moderator of others.
It has been shown to have higher predictive validity for turnover than other previous constructs measuring the same outcome [529]. Holtom and O’Neill also found job embeddedness to have strong predictive values for turnover intentions than job satisfaction and organisational commitment among nurses [31]. Zhang et al. [564] have noted, though, that community embeddedness is not consistently predictive of turnover in different studies, because of variations in types of “community” being assessed. They argue that this could be due to difficulties in defining “community” for urban residents. In this study, this was not a problem because the study was conducted in rural areas where the concept of “community” is easier to conceptualise by the participants. In addition, Zhang et al. also note that the conceptualisation of “links” should be changed from the number to the quality and strength of links because the number of links does not consistently predict the turnover intention.

Studies have shown that job embeddedness buffers the effects of other antecedents of turnover intention e.g. the negative effect of shocks on organisational citizenship behaviours and overall job performance [30]. When exposed to shocks, some embedded workers get more committed and their performance actually increases, thus suggesting that embedded workers are more resilient to shocks. However, job embeddedness is also confirmed as a moderator of the effect of Leader-Member Exchange (LMX) on performance [565-566], and the effect of perceived organisational fairness on organisational citizenship behaviours and other affective outcomes [567], all of which are antecedents of turnover intention. Mitchell et al. asserted that job embeddedness is a mediator of the effect of specific on-the-job and off-the-job factors (such as fit, links and sacrifice) on retention [29]. However, only few studies have confirmed the mediator role of job embeddedness on retention. One such study [556] tested the effect of socialisation tactics on turnover and found that out of the many possible sets of tactics, job embeddedness mediates the effects of only one set i.e. investiture tactics. Another study [568] found that job embeddedness mediates the relationship between some human resource management practices (compensation, promotion, supervisor support) and intention to quit. A third study found that job embeddedness
mediates the relationship between negative shocks on worker behaviour, especially job search behaviours [569]. However, such evidence confirming the moderating and mediating effects of job embeddedness is still little and mainly focused on specific industries like sales and hospitality. There are no such published confirmatory studies in the health sector. What is clear, though, is that job embeddedness may moderate some relationships and mediate others.

However, while the consequences and predictive validity of job embeddedness have been more widely studied, there have not been many studies of its antecedents. From the literature, I found several interventions (educational, regulatory, financial and supportive) that are antecedents of job embeddedness and retention of health workers in rural areas, which act through various mechanisms (e.g. attraction or compulsion) and at different stages of the rural pipeline. However, since most of the reviewed studies were conducted in developed countries, it was not clear whether their findings could be applicable in developing countries. Moreover, their mechanisms of action (the “how” and “why”), the most appropriate circumstances to apply them (the “when” and “to whom”), and their strengths on the outcome are mostly not documented.

Karatepe [570] confirmed two categories of antecedents of job embeddedness: work social support (co-worker support, supervisor support) and high performance work practices (training, rewards, empowerment etc). Eventually, these are related to organisational commitment and negatively related to intention to quit, and hence, retention. Other studies show that low job embeddedness and the job search behaviour of colleagues influence the turnover intentions of others, the so-called “turnover contagion” [571]. Therefore, the job embeddedness of colleagues may be considered an antecedent of the job embeddedness of an employee of interest. This implies that organisations that invest in increasing job embeddedness in general stand a stronger chance of avoiding mass resignations following the loss of an influential single employee or group of employees. However, most research has also not distinguished between extrinsic and intrinsic motivations for rural practice choice.
Whereas most interventions applied in developed countries mainly consist of extrinsic rewards, observations in Uganda and other developing countries show that there are health workers who work and stay in rural and remote areas for very long without extrinsic interventions. Therefore, they must have intrinsic reasons for working and staying in such areas. However, intrinsic reasons for rural practice in developing countries have not been studied widely. Only a few studies have so far shown that people with altruistic pro-social behaviour tend to self-select into health care jobs, public service jobs and are more willing to work in rural areas. Kolstad and Lindkvist [572] reported that nursing and medical courses are more likely to be attractive to students with prosocial behaviour. In addition, using 40 medical students and 40 nursing students in Tanzania, they conducted a dictator game which found that students who prefer to work in the public sector were also more likely to have prosocial behaviour.

Lagarde and Blaauw [573-574] conducted a panel study in South Africa using a sample of 377 nursing students and showed that students with prosocial behaviour were more likely to choose rural jobs. Similarly, Smith et al. [575] conducted a multi-country dictator game study in Kenya, South Africa and Thailand, with a total of 1064 nurses. They found that nurses had more prosocial behaviour than other students, especially for patients and the poor. Serneels et al. [468] also showed that, in a cohort study of 222 nursing students and medical students in Rwanda and 270 nursing and medical students in Ethiopia, students whose prosocial behaviour was heightened through religious teaching and exposure to people in rural areas were more likely to elect to work in rural areas. Few other intrinsic motivations have also been shown to attract health workers to rural areas e.g. love of nature, sense of adventure, sense of vocation etc [118]. Extrinsic factors (e.g. incentives, compulsory factors etc) or intrinsic factors are the antecedents (and hence moderators) of both job embeddedness and retention. The job embeddedness construct postulates that such factors on the job and off the job act together to create a figurative “mesh” in which health workers become embedded, then stuck and, with time, retained.
There are also not many studies which have investigated the pace of embeddedness, although some studies show that organisational socialisation increases the speed of job embeddedness [556]. It is also not known for sure whether on-the-job embeddedness and off-the-job embeddedness occur at the same pace. One general assumption, though, is that on-the-job embeddedness occurs faster because employees spend longer with colleagues at work than with neighbours in the community [576]. There are gaps in knowledge on key issues regarding the explanation of the evolution of retention. Therefore, I needed a theoretical framework or construct that could help me to investigate the circumstances (individuals, context etc) under which interventions and intrinsic factors act to increase retention in rural areas of developing countries. Job embeddedness fits the description of such a theory.

4.5 Application of Job Embeddedness in the present study

In the present study, I apply job embeddedness as the underlying theoretical framework. It forms the theoretical perspective (the “lenses”) through which I see the phenomenon under study, and significantly influences the design and conduct of the study. I look for on-the-job factors and off-the-job factors (links, fit and sacrifice) that affect the retention of the health workers. I look for the antecedents of embeddedness, and its role in the main outcome of retention. Therefore, the design of the study rotates around the concepts of factors antecedent to job embeddedness, and job embeddedness as an antecedent of retention. In this study, I define retention as “working in a rural location for longer than two completed years after qualification” (see Key Operational Definitions on page 20). My underlying assertion in this study is that job embeddedness is a partial mediator\(^\text{13}\) of the relationship between the antecedents in the rural pipeline, like incentives, other interventions and intrinsic motivation, and the outcome of retention. This means that there are other factors that lead to retention without passing through job.

embeddedness. Diagrammatically, I present its position as shown in Fig. 4.1

Reference source not found.

Fig. 4.1 Job embeddedness and rural retention: a conceptual model

In this study, therefore, if job embeddedness is indeed a partial mediator of the effect of rural pipeline interventions on rural retention, we should find the following:

1. Job embeddedness should only occur after the rural pipeline interventions and other antecedents have been implemented and brought health workers to the rural areas. Since I was dealing only with health workers already in rural areas, both the exposure of pipeline interventions and the outcome of job embeddedness had already taken place before the study started. Therefore, I could not prove that job embeddedness was due to the pipeline interventions. At best, I could only attempt to determine if there is co-occurrence between job embeddedness and specific pipeline interventions.

2. Job embeddedness should be positively correlated with the interventions, such that increasing the intervention should consistently increase the mediator. In other words, those who received more of the antecedents should be consistently more embedded than those who received less.
3. Job embeddedness should explain all or part of the final outcome i.e. retention. If job embeddedness enhances retention, increasing the degree of job embeddedness should increase retention for all or most participants. Findings inconsistent with this postulate, e.g. some new health workers having higher degrees of job embeddedness than some long-retained health workers or long-retained staff with very little or no embeddedness, would mean that job embeddedness is not a *conditio sine qua non* for retention i.e. that even if it may be necessary, it is not sufficient to lead to retention. That would confirm the existence of other pathways through which retention occurs other than job embeddedness, and hence confirm that job embeddedness is a partial mediator or rural retention.

Although the rural pipeline is a long process with a broad collation of processes and interventions at different stages (see Fig. 3.1, page 60, and Fig. 3.2, page 76), in this model I present it as a simple step in order to have a parsimonious conceptual model. The pipeline is porous, in that health workers can join or leave it at different points due to different reasons, and interventions can also be added, stopped or changed at different points along its length, depending on their appropriateness. I have left those additional features out of the schema. In addition, job embeddedness is a result of the broad constellation of factors (links, fit and sacrifice) that lead to health workers remaining in the rural area. In the interest of parsimony, I have also left those additional details out of the schema. I emphasise that the rural pipeline is neither the only mechanism through which health workers go to work and get attached to rural areas nor is it the end of the story. Some intrinsic factors increase the likelihood of people being exposed to pipeline interventions and indeed lead them to seek some of those interventions, while others only develop or manifest when the health workers are already in the rural area, after the pipeline. In addition, some extrinsic interventions are applied during the pipeline while others may be applied after the health worker is already in the

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rural area, after the pipeline. These concepts explain the lines that start before the pipeline, those that go through it and those that fall after it. My postulate is that, upon reaching the rural areas, health workers become embedded in their jobs, and eventually become retained. However, this is not the only route through which retention occurs, hence the dotted lines explaining alternative mechanisms. There are cases of retained health workers who may not be deeply embedded, and cases of new health workers who may be more embedded than those who have been retained for long. This caters for other moderators and mediators and explains the dotted lines that lead into retention.

I selected job embeddedness as the guiding framework because it enables me to synthesise the essential elements of most of the pre-existing frameworks. It gives room to accommodate attitudinal as well as interventional influences on retention. It looks at on-the-job factors, as well as off-the-job factors. It explores the issues of interpersonal and affective links as well as official and professional connections that an employee may have with his/her profession, occupation, organisation and community. It also made me acutely aware that choice of a rural job is more than choosing a job, because it also involves choosing a location, often for self and family. Therefore, the decisions to make are job-related but also affect off-the-job issues, thus increasing the number of stakeholders in the decision. As a result, to me, job embeddedness was closer to explaining reality than most other constructs that I came across.

4.6 Critique of job embeddedness and some responses

Although job embeddedness has been accepted as a useful construct in predicting turnover [579-580], some authors felt that it still needed further testing in diverse settings. Zhang et al. [564] felt that it is not possible to apply a construct across cultural boundaries, e.g. beyond the USA where it started, without revalidation, because attitudes towards work (and, hence, turnover decisions) vary with culture and even subtle differences like language dialect [581]. By the time of their writing, too few studies had applied the construct outside the USA [32, 521, 582] yet. However, since then, job embeddedness has been applied in several other areas e.g. Japan [583], South Africa [584], Cameroon [570], Australia [585] and several
others [517, 558]. In all cases, even without revalidation, it was consistently negatively correlated with turnover intention. This gave confidence to the originators of the construct about its cross-cultural predictive validity [517] and also gave me the confidence to apply it in Uganda without worrying about local validation or adaptation.

Other researchers felt that that a 40-item tool is too long and attempted to make it shorter. For example, Crossley et al. [586] tried to develop a shorter and global measure of job embeddedness (instead of asking questions about specific items in the six components of the matrix). Their final scale had seven items instead of the original 40. However, the originators of job embeddedness cautioned that since Crossley et al.'s scale is based on perceptions only, it measured a different construct than job embeddedness. Therefore, the originators caution that it should, rather, be retained in its original form [517].

My personal observation on the application of the construct is that it has only been applied with a quantitative approach, which has restricted its use to quantitative researchers only, who focus on generalisation of the findings to the population. Hence, in the present study I extended its use with a mixed-methods approach. This opens its application to qualitative researchers and the possibility of generalisation to theory.

4.7 Competing theoretical frameworks
Before making a final settlement on the theory to apply to the study, I reviewed the literature for other relevant validated theoretical frameworks that could be applicable. The fields of organisational behaviour and human resource management have received significant research attention for many years. Therefore, I had a wide repertoire of theoretical constructs to choose from, but job embeddedness encapsulated my interests better than the rest and emerged the strongest option for me. Table 4.2 shows a brief summary of the alternative constructs that I reviewed in comparison to Job Embeddedness and the reasons why I did not pick each framework.
<table>
<thead>
<tr>
<th>Theoretical framework /model</th>
<th>Originator(s)</th>
<th>Brief description</th>
<th>Rival argument</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job satisfaction</td>
<td>March &amp; Simon (1958)</td>
<td>People stay because they are satisfied</td>
<td>Many dissatisfied people stay and many satisfied people leave. Inadequate.</td>
</tr>
<tr>
<td>Side-bet theory</td>
<td>Becker (1960) [587]</td>
<td>Employees stay because they have a lot of non-portable and non-job-related stakes to lose by moving [587]</td>
<td>Focuses mainly on commitment and does not address pragmatic choices made in stay/leave decisions</td>
</tr>
<tr>
<td>Subjective norms</td>
<td>Fishbein (1967); Ajzen &amp; Fishbein (1977)</td>
<td>Individuals’ behaviour is subject to pressure from their “significant others” [588]</td>
<td>Focuses only on personal reasons, ignoring organisational reasons</td>
</tr>
<tr>
<td>Positive Deviance</td>
<td>Wishik &amp; Van der Vynckt (1976)</td>
<td>People with no resources adopt unusual but useful behaviours that solve a problem in a situation where others use standard practices that fail to work [589-591].</td>
<td>Could help to explain the off-the-job factors but not on-the-job factors</td>
</tr>
<tr>
<td>Cost of quitting</td>
<td>Mobley (1977)</td>
<td>Employees evaluate expected utility before quitting [592]</td>
<td>Many leavers do not go through detailed evaluation</td>
</tr>
<tr>
<td>Job investment</td>
<td>Farrell &amp; Rusbult (1981); Rusbult &amp; Farrell (1983)</td>
<td>Employees stay long because they feel they have made an “investment” which they hope to yield something positive for them [542]</td>
<td>Relies heavily on commitment being a mediator of retention without proof</td>
</tr>
<tr>
<td>Causal model of turnover</td>
<td>Price &amp; Mueller (1981)</td>
<td>Employees leave an organisation due to many factors (11 categories) [544]</td>
<td>Identifies many variables but gives no explanation of their linkages</td>
</tr>
<tr>
<td>Constituency commitments</td>
<td>Reichers (1985)</td>
<td>Employees stay due to commitment to the goals of a stakeholder constituency, not organisational goals [540]</td>
<td>Goals of stakeholders may not be known to the retained employee; No room for employee’s own objectives</td>
</tr>
<tr>
<td>Organizational Citizenship Behaviours</td>
<td>Organ (1988)</td>
<td>Employees stay because they adopt behaviours that lead to their being recognised and appreciated in the organisation [593]</td>
<td>Focuses mainly on performance, not retention</td>
</tr>
<tr>
<td>Theoretical framework/model</td>
<td>Originator(s)</td>
<td>Brief description</td>
<td>Rival argument</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>--------------</td>
<td>------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Organisational identity</td>
<td>Albert &amp; Whetten (1985)</td>
<td>Employees stay because they define their identity in terms of the organisation’s identity and the two are intertwined [29]</td>
<td>Focuses more on image and less on retention</td>
</tr>
<tr>
<td>Three-component model of Organisational Commitment</td>
<td>Allen &amp; Meyer (1990)</td>
<td>Employees stay because they feel they love and are attached to the organisation (affective commitment), the cost of leaving the organisation is high (continuance commitment), and they are obliged to stay (normative commitment) [594]</td>
<td>People with all these attributes still leave, suggesting that there are variables other than commitment that explain turnover and retention</td>
</tr>
<tr>
<td>Public Service Motivation</td>
<td>Perry &amp; Wise (1990)</td>
<td>People make irrational choices to work for public organisations because their personal goals coincide with those of the wider public [595]</td>
<td>Contains several other ill-defined concepts</td>
</tr>
<tr>
<td>Occupational Commitment</td>
<td>Morrow (1993)</td>
<td>People stay because they are more committed to their values and occupation than to their organisation [596] cited in [597]</td>
<td>Focuses more on commitment than retention and does not give much attention to the relationship between the two</td>
</tr>
<tr>
<td>Person-organization fit</td>
<td>Schneider (1987); Chatman (1989); Kristof (1996)</td>
<td>Employees stay if there is congruence between their values, personality traits and beliefs with the values, needs and the organisational culture of the organisation they work for [598-599]</td>
<td>Focuses more on the selection process, to get the right people for the organisation. Pays little attention to community factors.</td>
</tr>
<tr>
<td>Person-job fit</td>
<td>Saks &amp; Ashforth (1997); Werbel &amp; Gilliland (1999)</td>
<td>People are more likely to stay if their knowledge, skills and abilities (KSAs) are congruent with the requirements for their job [600]</td>
<td>Focuses more on performance than retention.</td>
</tr>
<tr>
<td>Prosocial behaviour</td>
<td></td>
<td>Employees choose rural locations because they want to help people in need [468, 573-574]</td>
<td>Very broad application, not yet well defined in relation to rural choice</td>
</tr>
</tbody>
</table>
Each one of the frameworks shown in Table 4.2 could have been applied to explain retention in rural areas. However, as shown, each one of them had weaknesses ranging from a narrow focus to lack of adequate literature and lack of a theoretical back-up. Therefore, I ignored them for those individual weaknesses and settled for the job embeddedness construct.

4.8 Conclusion

This chapter has looked at the theoretical basis underlying this study. I have described job embeddedness, which is the theoretical framework used in the study, its application and the role that I postulate it plays in retention of health workers in rural and remote areas. I also showed the competing frameworks that I considered before choosing job embeddedness. The next chapter describes the methodology of the study.
5 METHODOLOGY

5.1 Introduction

In the previous chapter, I described the theoretical framework underlying this study. The aim of this chapter is twofold: to make transparent the philosophy underlying the methods used in this PhD research and to describe the methods actually used. Research methods have philosophical moorings from which they originate and may not drift by far. I present the chapter hierarchically, following the vertical philosophical logic applied by Lincoln and Guba [601], Crotty [602] and Staller [603], beginning with the most philosophically abstract concepts and ending with the most action-oriented ones. In this chapter, I describe the paradigm of this PhD research, followed by its ontology and epistemology. Then I present the methodology, comprising of the study design, selection of the hospitals and participants, as well as the methods used to obtain the data. I describe how I addressed quality and ethical concerns and end by highlighting limitations of the study. The flow of the chapter can be summarised in Table 5.1.

Table 5.1 Hierarchical flow of theoretical conceptualisation

<table>
<thead>
<tr>
<th>Level of abstraction</th>
<th>Concept level</th>
<th>Choice applied in this study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most abstract</td>
<td>Paradigm</td>
<td>Pragmatism</td>
</tr>
<tr>
<td></td>
<td>Approach</td>
<td>Mixed Methods</td>
</tr>
<tr>
<td></td>
<td>Ontology</td>
<td>Relativism</td>
</tr>
<tr>
<td></td>
<td>Epistemology</td>
<td>Subjectivism</td>
</tr>
<tr>
<td></td>
<td>Theoretical “lenses”</td>
<td>Job embeddedness</td>
</tr>
<tr>
<td></td>
<td>Methodology</td>
<td>Embedded single-case case study</td>
</tr>
<tr>
<td></td>
<td>Design</td>
<td>Concurrent embedded mixed methods design</td>
</tr>
<tr>
<td></td>
<td>Methods</td>
<td>In-depth interviews with a topic guide</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Self-administered questionnaire survey</td>
</tr>
<tr>
<td></td>
<td>Axiology</td>
<td>Values focused on social justice</td>
</tr>
<tr>
<td></td>
<td>Rhetoric</td>
<td>Personal (1st person singular &amp; plural)</td>
</tr>
</tbody>
</table>
5.2 Philosophical foundation: pragmatism

I approached the PhD from a paradigm of Pragmatism [604] and used a mixed-methods approach [604-607]. As worldviews that establish scientific traditions, paradigms differ on basic beliefs about reality (ontology) and knowledge (epistemology) [608-610]. Pragmatism is a paradigm that adopts a middle ground between the philosophical purists on the continuum of the paradigm debate in which, on one hand, positivism posits that there is reality out there, independent of our knowledge of it, which is a universal truth that all should arrive at if they rigorously follow the same methods of inquiry. Positivism suggests that the single “truth” can be realised if scientific inquiry is done objectively, by the researcher avoiding bias and following methods and universal laws rigorously. On the other hand, constructivism posits that there is no single reality, and that “truth” is interpreted according to the knowledge and experience of both the researcher and the researched [604, 611]. Constructivism argues that objectivity is not possible with research on the social world because the findings are subjectively co-constructed and laden with the values of both the researcher and the researched, who are not value-free [601, 606, 612-615].

For its part, pragmatism argues that there is a real world out there, independent of our knowledge of it, but that there is also a social world, influenced by our experiences and interpretations of those experiences. Therefore, according to pragmatism, the dichotomy of views on reality and truth is not necessary because positivism is applicable to the natural world while constructivism is applicable to the social world [616]. Stemming from this, pragmatism recommends that the main guiding principle in the adoption of a paradigm should be “fitness for purpose” because different research questions and problems dictate different considerations [604-607, 617-618]. Some contexts require generality (best explained by laws of the natural world, hence a positivist approach), while others require particularity (best explained by inquiry focused on the individual, hence a constructivist approach) [611]. The initial proponents of pragmatism were Peirce, James and Dewey [619-620]. The core aspect of pragmatism, particularly for Peirce, was the so-called “pragmatic maxim”, which emphasises that hypotheses should be evaluated on the
basis of their “practical effects” [620] p.3. However, the original versions of pragmatism have evolved over the years following criticism and its being overshadowed by other forms of philosophy, especially analytic philosophy [620]. For example, by insisting on the pragmatist maxim, early pragmatists were accused of not recognising transcendental influences on effects because they assumed everything to be a result of human action [620]. Pragmatism was revived by Rorty who argued that truth is what is agreed upon by a community [621]. Subsequent pragmatists have taken cognisance of transcendental effects to the extent that pragmatism currently combines more elements of both constructivism (which views the social world as a dynamic place with constant reordering due to changing interpretations), and positivism (which views the natural world as consisting of a changing part with an unchanging foundation that can be predicted with universal laws) [613, 622]. Constructivism states that, on social issues, there is no single reality that is understood in the same way and accepted by all people. Instead, there are multiple interpretations of reality, and meanings are shared with other people, based on exposure, experience and background and can be revised if their experience changes [609, 615, 623]. Meanings are co-constructed by the study participants together with the researchers through dialogue and interpretation [609].

This ontological position, called relativism, is accompanied by an epistemic position of subjectivism, which states that there can be multiple interpretations of the “truth” because social events are seen differently by different people, each one through the lenses of his/her experience. For example, in the case of the phenomenon of increasing access to health workers in rural areas, the predominant thinking in health policy circles currently is that health workers can only go to rural areas willingly if they are given incentives. This is the one “truth” that is currently believed by the community of most policy-makers. It has influenced government policies and shaped research for some time, most of which are geared to looking for that one “truth”, the best incentive package that can attract health workers to rural areas. This ontologic position, of an entire community believing in one “truth” that can be seen by all if they follow the same procedures rigorously, is more in line
with Rorty’s suggestions mentioned above. However, there are disagreements on this position with some scientists insisting that there cannot be just one truth. For example, other than pragmatism, Critical Realism, a possible alternative ontological position I could have adopted for this study, emphasises that there exist both a natural world and a social world, but that the social world exists within the natural world, and that both co-exist within “lawful reasonably stable relationships” [625] p.429 (cited in [604] p.92). Critical realism was initially propounded by Bhaskar and Harré [624]. Like pragmatism, it rejects the notion that there exists one truth. Instead, it advocates that that there are multiple viewpoints to reality. However, I did not adopt critical realism because my aim differed from its emancipatory and transformative mission [626-630]. Critical realism focuses on empowering the study subjects in order to enable them to overcome their challenges. One of the ways in which it does this is by exposing the generative mechanisms of the challenges so that they can be tackled by the affected [631]. In this study, my aim was not to empower the health workers retained in the rural areas in order for them to work and improve their conditions. I did not look at rural retention as a problem to be addressed by the retained health workers. Rather, I aimed at understanding the situation of rural retention and the processes that lead to it better in order to enable policy makers to increase both the numbers of health workers who go to and those who become retained in rural areas. Therefore, my focus was better served by pragmatism, which allowed me to answer the research questions using the most appropriate approaches.

Realism is accompanied by the epistemic stance of objectivism which states that the one truth can be observed by all researchers if they follow uniform and standardised methods of inquiry. For example, if all researchers followed the same research methods, they would confirm that health workers require incentives to go to rural areas, and the research would probably identify the same incentives if conducted under identical conditions. Instead, I subscribed more to relativism and subjectivism because I believe that different retained health workers have different reasons that took them to the rural areas and retained them there. Since many of them did not receive incentives to go there, I believe that there must be other
reasons, beyond incentives, that took them and kept them there. Therefore, to me, the “truth” of incentives was not sufficient. I believed that there was more than one truth, and each participant could have his/her own truth. In addition, I believed that to understand the phenomenon of rural retention fully, I needed to interact with the participants, and in their circumstances at the workplace, in order to understand their choices to remain in the rural area.

This meant doing “naturalistic inquiry” [614, 623, 632] by close engagement with the phenomenon in its natural setting. I believed that the participants would describe their experience from their perspective and that my interpretation of the findings would also be influenced by my experience and values. However, to answer the research question on the role played by job embeddedness in retention, I believed that it was possible to use a standard methodology for measuring the degree of job embeddedness and be as objective as possible. Therefore, I was open to the ontologic stance of realism and the epistemic position of objectivism too. Of necessity, therefore, the study had elements of both constructivism and positivism. In both cases, I looked at retention through the “theoretical lenses” of job embeddedness, by constantly looking for on-the-job and off-the-job factors (links, fit and sacrifice) that led to the retention of the health workers. I used this theoretical perspective because I was interested in the reports and interpretations of the individuals’ lived experiences of going to, and living and working in rural areas over the years, as they were retained.

5.3  Research approach: mixed methods

The first research question (Why do some qualified health workers become retained in rural areas of developing countries?) demanded an in-depth understanding of the phenomenon of rural retention of qualified health workers and their interpretation of the phenomenon. This required subjective interaction and interpretation, particularities for which in-depth qualitative inquiry was the most suitable approach. However, the second research question required objective measurement of the degree of job embeddedness, a generality for which a quantitative approach was the most suitable. Of necessity, therefore, I used a mixed-methods approach for this PhD. Fortunately, one key advantage of pragmatism is the flexibility to apply
either qualitative or quantitative methods or both as and when appropriate, allowing the researcher to harnesses the advantages of both approaches [607]. Specifically, I used an embedded mixed-methods study. According to Burke Johnson et al. [631], a mixed methods design is one in which a researcher combines elements of quantitative and qualitative approaches for purposes of breadth and depth, respectively. Mixed methods research is defined by a set of key characteristics, of which methodological eclecticism and paradigm pluralism lie at the core [632].

A mixed methods approach is used when the concern is to understand both the “what” and the “why” of what is happening [633]. It is suitable for investigating complex, pluralistic situations, such as the phenomenon I was investigating in this case, which required both in-depth understanding of the reasons and perspectives of the participants, as well as measurement of embeddedness [634-639]. The purpose of mixing the approaches, therefore, was to be able to address the research questions of the study, which were too diverse to be addressed with one approach. Moreover, a mixed-methods approach was warranted because all the previous studies with job embeddedness had used only quantitative approaches and only captured limited information regarding retention but not the process by which it occurs. Such information could best be obtained through qualitative research but it was not clear whether a qualitative approach was even possible. Therefore, this study made an innovative attempt to broaden the scope of application of the job embeddedness construct and to open it up for qualitative research. I used the qualitative approach to answer the “why” and “how” questions in the study. I used the quantitative approach to complement the qualitative approach by measuring the degree of job embeddedness and determining the duration of retention, which could not be done qualitatively [638, 640]. I applied a quantitative method tool that has been tested, validated and found to be replicable in different settings. I applied it to the same participants who had given the in-depth interview.

The research questions of this study were of a “why” and “how” nature as I wanted to know why a few health workers actually work in rural areas for long, moreover in
a developing country, some without incentives, whereas most other health workers in the world prefer to live and work in urban areas or migrate to developed countries, and how they became integrated and retained. They demanded qualitative inquiry. Although some previous studies had shown that health workers go to rural and remote areas for a wide range of reasons [27-28, 118, 121, 443-444, 641-642], most of the focus of interventions has been on incentives. However, I felt that there were, potentially, alternative, if not rival, explanations that could have led to working in rural areas for long, because I had observed that some health workers are retained in rural areas for long without extrinsic incentives. I set out to look for some of these alternative explanations, and this demanded engagement with the participants very closely as individuals and in their natural settings. Hence, qualitative research was the core approach of this PhD.

5.3.1 Approach to mixing the methods

This PhD used a concurrent embedded mixed-methods design [640] and the mixing approach was integration [643-644]. In the concurrent embedded mixed-methods design, the study takes place using one core approach and the other approach is added as a strand to enhance a particular aspect which the main approach may not address appropriately [640]. In the “Integration” approach to mixing, the data from the different studies are collected concurrently but analysed separately according to the rigour of each method. Then, the results are merged to give a more complete description of the phenomenon, and the whole study is interpreted as a unit [643-644]. In the present study, the qualitative method was the core method used, and the quantitative strand was included specifically to measure the degree of job embeddedness because it could not be measured qualitatively. The degree of embeddedness was also required to test its ability to predict intention to quit the rural area. However, since the tool used for measuring job embeddedness does not capture the outcome of intention to quit, I converted the item on intention to quit from the qualitative study and quantised it to enable me to analyse the degree of job embeddedness in relation to the intention to quit. Quantising (also called “quantitising” in some sources) is the process of converting qualitative data into categorical data that can be analysed quantitatively [621, 645-648]. Therefore, the
quantitative study was embedded within the main qualitative study. The data were obtained from the same participants, at the same sitting, beginning with qualitative data and followed with quantitative data. This order of applying the methods was influenced by the fact that the quantitative component was very small and tackled only very few issues. The core questions of the study were qualitative and preceded the quantitative questions in terms of logical flow. The two components were analysed separately and the findings were integrated for interpretation in the discussion. The procedural steps of mixing the methods as used in this study are presented in Fig. 5.1.

![Fig. 5.1 Flow diagram of the mixing of the methods](source: Modified from Creswell and Plano Clark [640] and Zhang and Creswell [643])

5.4 Study design: Case study
This was an exploratory embedded single-case case study [649-650], in which the case was the phenomenon of some qualified health workers retained in Uganda’s rural health facilities at a time when the trend of their contemporaries is to migrate to urban areas and abroad. The embedded study units were the individual participants. The case study approach has attracted significant attention especially from qualitative researchers who have used it for social science investigations.
Prominent authors on case study methodology include Yin, Stake and Merriam. However, others like Lincoln and Guba, Denzin and Lincoln, Ragin, Gerring, Flybjerg, Eisenhardt and Bassey, among others, have also written prominent works on case study methodology. As a result of many methodological authorities, there are multiple definitions and interpretations of the methodology. There is significant disagreement on some key aspects of the methodology. For example, there are multiple definitions and interpretations of a case study. They tend to differ on what a case study is, its philosophical underpinnings, its design, typologies and time focus. However, they mostly agree that case study can be implemented with either qualitative, quantitative or mixed-methods.

Some authors consider the case study to be a methodology while others e.g. Stake, consider it to be a study of a selected phenomenon, which is “the case”. According to Stake, a case study is:

“...an investigation and analysis of a single or collective case, intended to capture the complexity of the object of study...the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances...” [651] p. xi

Stake’s definition emphasises the particularity of what is to be studied and further emphasises that:

“......Case study is not a methodological choice, but a choice of object to be studied. We choose to study the case. We could study it in many ways.......As a form of research, case study is defined by interest in individual cases, not by the methods of inquiry used... The case is specific ...it is a bounded system ...” [652] p. 236

In contrast, however, Yin described a case study as:

“...an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” [649] p.18
The above definitions highlight some of the disagreements on aspects of the case study. For example, Stake emphasises that the boundaries of the case should be sharp and clear while Yin emphasises that they should be porous and unclear. While Yin and Stake emphasise that case study can be conducted to study a phenomenon which is important in its own right (sui generis), Gerring defined the case study as:

“as an intensive study of a single unit with an aim to generalize across a larger set of (similar) units...” [653] p.342.

Therefore, while Yin and Stake do not focus on statistical generalization, Gerring looks at a case study in terms of generalization. Other more recent authors have tended to combine the earlier definitions to obtain more inclusive definitions. For example, Creswell has given a very comprehensive definition addressing most of the issues under debate between Yin, Stake and others:

“...case study research involves the study of an issue explored through one or more cases within a bounded system (i.e., a setting, a context). Although Stake ...... states that case study research is not a methodology but a choice of what is to be studied (i.e., a case within a bounded system), others present it as a strategy of inquiry, a methodology, or a comprehensive research strategy....... I choose to view it as a methodology, a type of design in qualitative research, or an object of study, as well as a product of the inquiry. Case study research is a qualitative approach in which the investigator explores a bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information (e.g., observations, interviews, audiovisual material, and documents and reports), and reports a case description and case-based themes. For example, several programs (a multi-site study) or a single program (a within-site study) may be selected for study”. [654] p.73.

[emphases are original]

Other differences revolve around the time focus of the case study. Whereas most authors state that a case study can cut across time or focus on any other time other
than the present, Yin emphases that a case study focuses on a contemporary phenomenon. I give a more detailed comparison of the authors’ position Table 0.2 (see Appendix 3, page 326).

My understanding of a case study, therefore, is derived from a synthesis of all the concepts which form the focus of all the definitions above, and which show how the understanding and practice of case study has evolved over the years. About ten generic characteristics of a case study have been identified and can be summarized as: relation to people (because case studies always study people’s interpretation of phenomena and their contexts); naturalistic inquiry (cases are studied in their natural environment); contemporaneity (case studies always investigate contemporary although historical issues may also be investigated specifically); holism (the researcher takes a holistic approach to understand and explain what happens and why it happens); qualitative in nature (focusing on the quality of the data, rather than their type); independence (the researcher has no control over the events in the case, even if he/she may influence their interpretation); multiple sources of data (several sources of data may be used); multiple methods of data generation (methods may vary with the type of data); rich descriptions may be produced (to cover the phenomenon and its context) [655]. As a result, my approach to the study encompasses more of Yin’s proposals than other authors’. For example, I investigate a phenomenon that is still ongoing, hence, contemporary. This provides me the opportunity to observe some aspects of the phenomenon as it evolves. By mentioning the difficulty of disentangling the phenomenon from its context, Yin’s definition implies that a case study investigates issues which are so intricately linked to the context to the extent of being taken for granted as part of the context. Therefore, they can only be seen by a keen eye to single them out as being worthy of investigation.

I used an embedded single-case case study. According to Yin, an embedded single-case case study is one in which the case may have several units of analysis or data points but which is analysed as a single unit, irrespective of the sampling of the data points [649]. It allows the researcher to peer into the case by analysing the individual units, while still maintaining the broader picture of the phenomenon. The
phenomenon of interest in this study was the observation that there were some qualified health workers who stay for long in rural areas of a developing country, with no extrinsic incentives, at a time when the predominantly observed trend for other health workers is rural-urban migration and emigration to foreign countries. In addition, the predominant thinking in health policy circles is that qualified health workers can only go to rural areas if they are incentivised, often with financial incentives.

Whereas it may appear not surprising that health workers are retained in a rural area in a country where the majority of the population also live in rural areas, its importance becomes evident when one analyses the practice location choices of their contemporaries. Most health workers currently tend to migrate from rural to urban areas and abroad. Therefore, qualified health workers who go to rural areas move against the tide, and those who become retained are of even more research interest because their actions are unexpected and anachronistic, and worth investigating because of their positive deviance\textsuperscript{15} from the norm. The phenomenon is also worth investigating with case study design because its boundaries and its context are not clear. It is fused with two related contemporary situations. The fact that the majority of the population in developing countries lives in rural areas makes working and living in such an area by qualified health workers appear to be an unremarkable issue. In addition, rural retention is overshadowed by other aspects of the crisis of human resources for health because most attention focuses on increasing training and reducing foreign migration. Rural retention does not appear prominently in the literature or policy documents until about 2004. Due to lack of adequate supportive literature and data, it even becomes hard to claim that there is retention, when what everybody sees are reports of a shortage. This masking renders it suitable for study with the exploratory case-study design.

Although both Yin and Stake concur that the philosophical underpinning of case study is constructivism [656], case study design also accommodates positivism. It

\textsuperscript{15} “Positive deviance” is a theory that tries to explain positive outcomes from people without resources who adopt unusual behaviours that other people in the same situation are not aware of or would reject. It is often applied to explain healthy and well-nourished but poor children 589. Marsh, D., et al., \textit{The power of positive deviance}. BMJ 2004. \textbf{329}: p. 1177-1179.
provides for constructivist methods which facilitate close interaction between the researcher and the participant in the latter’s natural setting, as well as giving him/her a voice to tell his/her story. However, it also provides for objectively looking at the phenomenon from a distance, using quantitative means. These properties of flexibility, to accommodate both qualitative and quantitative methods, made case study design blend well with a pragmatist worldview which accommodates mixed methods research. In fact, most case studies use both approaches but there may be a predominant approach. Similarly, in the present study, while I used both approaches, the qualitative approach was the predominant element, primarily because of the nature of the key research question which were mostly of a “why?” and “how?” nature [657].

I favoured the qualitative approach because I wanted to approach the study from the perspective of the retained health workers and to get their lived experiences since previous studies approached the problem from the perspectives of the policy makers. Although some of them have focused on identifying the incentives that might attract health workers to rural areas, they offer choices from the limited menu available to policy-makers because the research process becomes too complex for the participant to differentiate between the choices if they are many, thus affecting reliability [658]. This is particularly true of choice studies e.g. Discrete Choice Experiments (DCEs) [470-473, 475, 477-478, 480, 482-483, 659-662]. With qualitative research, the number of options is unlimited by such concerns. Moreover, approaching the issue from the perspective of retained health workers would give me a chance to study “revealed preferences”, which are largely unexplored because the previous studies have focused on “stated preferences”. Therefore, this study contributes to filling an information gap on revealed preferences.

Other than incentives, some few recent studies have shown the existence of other motives and utilities that attract health workers to rural areas, such as prosocial motives [468, 572-574, 663]. This was an area of interest for this PhD because it would confirm the existence of non-incentive reasons for working in rural areas that could, potentially, be tapped into by developing countries because they do not
require heavy financial investments. However, the evidence is still very little. This PhD aimed to identify such reasons, if any, and contribute to the available evidence of non-incentive reasons for working and being retained in rural areas. This would require in-depth interviews with the participants. Case study design enables the researcher to make such in-depth inquiry about an issue and was, therefore, the most appropriate design for this type of study. However, there are four main criticisms of the case study design [649]. I discuss them briefly here and show how I addressed each one of them in this study. I refer to some of the issues again in the sections on quality control (see page 135) and limitations (see page 277).

One criticism is that case study design lacks rigour [649], the demonstration of the legitimacy and technical soundness of the research process, which is a direct measure of the technical strength of the study [664]. Rigour is achieved by strict adherence to set standards of practice in the conduct of the type of research being implemented. However, since case study design lacks a codified and standard format that is acceptable to and applied by all case study researchers, it is argued that it is not rigorous [665-666]. Lack of rigour could lead to bias. Since this study was mainly qualitative, I addressed questions about rigour in the sense of qualitative research. Qualitative research generally strives to attain rigour by ensuring trustworthiness through four criteria: credibility, dependability, confirmability and transferability [664, 667-668]. I focused on attaining the four characteristics of qualitative methodological rigour, as I describe them in the section on quality control and data management (see page 135).

A second criticism of case study design is that findings from case studies cannot be generalised because of small and unrepresentative samples which are carefully and purposively selected, thus introducing selection bias [649]. The rebuttal to these criticisms is that the main aim of case study research is “analytic generalisation”, the ability of the researcher to generalise findings obtained from a study to an underlying general theory, theoretical proposition or construct [649]. Case study design is not intended to attain “statistical generalisation” to whole populations, but rather to give an in-depth understanding of a single issue. Therefore, purposive sampling in case study design is necessitated by the desire to describe the
particularity and specificity of the phenomenon under investigation. A large sample would be unnecessarily wasteful of scarce resources.

A third criticism of case studies is that they take too long to conduct and generate too much data [649]. The rebuttal to this criticism is that it is necessary to spend some time with the participant and in the participant’s context to “acclimatise” the researcher, and to enable him/her to build rapport with the participants in order for good data generation. However, case studies do not always have to take very long, unless they are using approaches like ethnography or generating their data by participant observation, neither of which approaches I used. In fact, Yin discourages prolonged case studies and lengthy narratives [649]. The fourth criticism of case studies is that they cannot establish causal relationships because they are cross-sectional or contemporary in nature. Positivist researchers familiar with Hill’s criteria on the judgement of causality [669] always look for “temporality”, a condition that a putative cause should precede an observed effect, which has almost become a *conditio sine qua non* for confirmation of causality. However, recent papers report that causality should be determined on the basis of the observed mechanisms, rather than any other criterion, and that qualitative research is best placed to observe these mechanisms [670]. In fact, case studies may provide the information necessary to complement scientific experiments that describe temporality. Therefore, case studies are considered to be useful adjuncts to experiments in studies of causality [649].

5.5 Methods
Since I used qualitative and quantitative methods, I present the two methods separately for purposes of demonstrating the rigour that I followed for each method. This is in accordance with recommendations on the conduct of mixed methods studies, that each method should be described separately [634, 636, 671-674]. I present the qualitative method first because it was the core method, followed by the quantitative method.
5.5.1 Qualitative research: In-depth interviews

To implement the qualitative component of the study, I conducted in-depth interviews with the participants. I opted for in-depth interviews because they allow the use of an open-ended, discovery-oriented approach, which allows the researcher to understand the participant’s perspective more deeply [675].

Selection of the context and staff cadres

I first selected the context before selecting the participants. I decided on the national context of Uganda, a developing country, because of unique challenges faced by developing countries in training, recruiting and retaining health workers, especially in rural areas, as alluded to in previous chapters, especially Chapters 1 and 2. Due to limited resources and the exploratory nature of the study, I selected one country, hoping to learn lessons that may be used for larger and multi-country studies in future. After selecting the national context, I decided on the cadres to interview. I decided to study participants from two staff cadres i.e.: doctors and nurses, as I defined them in the operational definitions (see page 20). I purposively selected these two cadres because they are in high demand in urban areas of Uganda and they also have a possibility of migrating internationally. Studies have shown that these two are the most mobile cadres, whether from rural to urban areas within-country or from developing and middle-income countries to developed countries [53, 185, 676-683]. This is because they have transferrable/portable skills and qualifications that can be recognised internationally. Their stay in rural areas of a developing country is, therefore, important and worth investigating because it is surprising and, from it, one can obtain information that may be useful in knowing which type of health workers are likely to work in rural areas.

Saturation point and sample size

The next step was to obtain the number of participants to include as units of observation. To do this, I reviewed the literature to look for the point at which “theoretical saturation”, the non-discovery of further new codes from the data [684-685], is obtained. Although some researchers insist that there is no fixed
number for a qualitative saturation point because the data depend on the research questions and the participants, one previous study specifically focusing on this issue had shown that a stable codebook (indicating saturation) may be attained with as low as twelve interviews [686]. However, others had suggested a range of four to fifteen interviews [687], while others suggest a higher range of 12 – 60 interviews, with 30 being the medium [688]. Given this wide range of suggestions (ranging from 4 – 60 interviews), many studies tend to use an arbitrary multiple of ten with no reasonable explanation [689]. Francis et al. [690] also recommend that an estimated saturation point should be set a priori for planning purposes, basing on the complexity of the research question and interview tools, diversity of the sample, the nature of the analysis and the number of strata, if stratification has been applied. In the face of uncertainty regarding the saturation point, and the limited resources available, I chose to err close to the minimum for each sub-category.

Therefore, with this advice and hindsight from the studies of Guest et al. [686] and MacQuarrie [687], and given that I needed to do both qualitative and quantitative interviews, I adopted a priori a saturation point of an average of 12 interviews per cadre. However, since I wanted to compare the retention factors, processes and choices not only by cadre but also by duration of retention, I decided to get two groups per cadre i.e. those retained for a long period (>10 years) and those retained for short-to-medium term (3-10 years – NB: health workers who had worked in the rural area for any additional month over the minimum of 2 years were deemed to have worked for 3 years). Therefore, I planned for twelve interviews for each of these four sub-groups (i.e. 12 interviews x 2 cadres x 2 retention categories per cadre = 48 interviews altogether), while remaining open to the possibility of reaching saturation with fewer or more interviews per cadre sub-group. In the end, I interviewed 50 participants.

Inclusion criteria and sample size of hospitals

To obtain the participants to interview, I purposively selected government and private not-for-profit hospitals on the basis of five criteria: hospital level, rurality,
hospital ownership, access (in terms of convenience and timely permission), and geographical region. For hospital level, I purposively included only general hospitals, because they are the only hospitals found in rural areas. Higher level hospitals like regional and national referral hospitals are found in large urban areas only. For rurality, I used the definition of “rural” I had adopted in the operational definitions (see page 20). For regional balancing, I considered the four major (albeit non-formal) regions of Uganda i.e. north, central, west and east (see map of Uganda on Appendix 1, page 323) as applied by the Uganda National Bureau of Statistics (UBOS) during the conduct of national surveys and censuses [33]. In terms of ownership, I purposively included government hospitals because they are the ones directly affected by national policies on recruitment and retention. I also purposively included hospitals affiliated to the Uganda Catholic Medical Bureau (UCMB) as a representative of the private sector because of two reasons. First, they own the largest non-government network of hospitals and other levels of health care and, second, their environment is more familiar to me and access would be easier. I needed quick access due to limited resources, because I was partly self-sponsored.

I needed a minimum of 48 participants in four cadre sub-groups i.e. 12 nurses retained for 3 – 10 years, 12 nurses retained for >10 years, 12 doctors retained for 3 – 10 years and 12 doctors retained for >10 years (i.e. 12 x 4 cadre sub-groups = 48 participants). I decided to get them equally distributed from the four regions of Uganda, hence, 12 from each region (i.e. 48 participants / 4 regions = 12 per region). Since I needed 12 per region in four cadre sub-groups, that meant that I needed 3 of each cadre-sub-group per region (i.e. 12 per region / 4 cadre sub-groups = 3 per cadre sub-group per region). The easy thing to do, then, was to get 1 per cadre sub-group in each of three hospitals in each region (i.e. 12 per region divided as follows: 1 per cadre sub-group per hospital * 4 cadre sub-groups * 3 hospitals). Therefore I planned to interview participants from at least three

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16 The south of Uganda is occupied by L. Victoria. It has some inhabited islands but is formally considered part of Central region.

17 I work for a university owned by the Catholic bishops of Uganda, just like the UCMB facilities. I also interact regularly with the managers of those hospitals through activities of the UCMB.
hospitals per region i.e. (3 * 4 = 12 hospitals i.e. North = 3, East = 3, West = 3 and Central = 3). However, to minimise the risk of failure to raise the number in case of failure to get permission in some hospitals, I increased the number of targeted hospitals to 16 (i.e. North = 4, East = 3, West = 4 and Central = 5), basing on the number of rural general hospitals in each region, by owner.

I reviewed the list of hospitals in the country and selected only conveniently accessible rural general hospitals of the government or UCMB. I shortlisted the 16 hospitals (8 PNFP hospitals and 8 government hospitals) and tried to communicate by telephone to their managers to book appointments for the interviews. From the shortlist, I removed 4 hospitals whose managers I could not contact, and I retained 12. The process of selection is summarised in Fig. 5.2 (see page 129). Eventually, I did not get the numbers as I had planned due to failure to confirm all the appointments. The detailed final distribution of the participants interviewed is shown in Table 5.2 (see page 130). I have renamed the hospitals with unrelated alphabetical letters in order to maintain the anonymity of the participants. In the end, I visited 10 hospitals and interviewed the participants on site. For the remaining two hospitals, I met two participants in Kampala, at their request. They had come for meetings and would not be going back soon.

Selection of the participants

For each hospital, I contacted the Medical Director (for PNFP facilities) or Medical Superintendent (for government facilities) by telephone several weeks in advance, requesting them to identify for me the longest-serving staff in each of the four sub-categories i.e. doctors (3 – 10yrs), doctors (>10yrs), Registered Nurses/Midwives (3 – 10yrs) and Registered Nurses/Midwives (>10yrs). This was meant to book appointments in advance and minimise the possibility of missing the appropriate participants on the days when I went to the hospital, given that they are few. Despite this, some hospitals did not have people who fitted in some of my categories. So, I ended up taking more of those participants from the other hospitals. Especially, PNFP hospitals tended to lack Registered Nurses in the 3 – 10 year category. In order not to disrupt work or miss participants, I made the
selection arrangements in advance, by telephoning the hospital managers, some of whom also turned out to be participants. I requested them to identify for me the doctors and registered nurses who had served in a rural area for more than two completed years i.e. all those who had served beyond two years were eligible for inclusion as having served 3 years or more. On the appointed date, I only needed physical identification of the selected participants. Upon arrival and self-introduction, I asked the most senior member of the Hospital Management Team present to identify the pre-notified participants for me and to schedule how I would interview them, depending on their workload.

NB: GOU = Government of Uganda. PNFP = private not-for-profit. PFP = private for-profit. UCMB = Uganda Catholic Medical Bureau. NRH = National Referral Hospital. RRH = Regional Referral Hospital

Fig. 5.2 Flow diagram for the selection of hospitals

Generation of qualitative data
To generate qualitative data, I conducted in-depth interviews using a topic guide (Appendix 7, page 334). I developed the topic guide following a detailed literature review, using published literature and grey literature on the topic of health worker attraction and retention in rural areas. I also used the original 40-item questionnaire of the job embeddedness construct [522] to guide the set up of the topic guide. The topic guide had nine main items for inquiry, and each had various probes, just in case the participant did not address important issues. I conducted all the interviews personally and face-to-face.

Table 5.2 Study hospitals by owner, location and participants studied

<table>
<thead>
<tr>
<th>No.</th>
<th>Identity</th>
<th>Owner</th>
<th>Region</th>
<th>Duration of rural service</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Doctors</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3–10 yrs</td>
<td>&gt;10 yrs</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Nurses</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3–10 yrs</td>
<td>&gt;10 yrs</td>
</tr>
<tr>
<td>1.</td>
<td>Hospital A</td>
<td>PNFP</td>
<td>North</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Hospital B</td>
<td>GOU</td>
<td>North</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3.</td>
<td>Hospital C</td>
<td>PNFP</td>
<td>East</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Hospital D</td>
<td>GOU</td>
<td>West</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>5.</td>
<td>Hospital E</td>
<td>GOU</td>
<td>East</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>6.</td>
<td>Hospital F</td>
<td>GOU</td>
<td>Central</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Hospital G</td>
<td>GOU</td>
<td>West</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>8.</td>
<td>Hospital H</td>
<td>GOU</td>
<td>Central</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Hospital I</td>
<td>PNFP</td>
<td>West</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Hospital J</td>
<td>GOU</td>
<td>Central</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Hospital K</td>
<td>PNFP</td>
<td>West</td>
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<tr>
<td>12.</td>
<td>Hospital L</td>
<td>PNFP</td>
<td>Central</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>12</td>
</tr>
</tbody>
</table>

The interviews took place on hospital premises with just the two of us at the interview venue. Procedurally, after greetings, self-introduction and other courtesies with the participant, I gave the participant a copy of the Participant Information Sheet (see Appendix 4, page 328). After s/he completed reading it, then I gave him/her the duplicate copies of the Consent Form (see Appendix 5, page 331), to read and sign. After s/he signed both copies, I also signed both and gave him/her a copy to keep and I kept mine, and then proceeded with the interview. With the participants’ permission to record the interview included in the Participant Information Sheet and the Consent Form, I audiotaped the interviews with a digital voice recorder / dictaphone (Make: Olympus Digital Voice Recorder VN-8500PC). Given that the participants were on duty and most of them were senior staff in the
hospitals, there were occasions of brief interruptions where other staff came in to ask them for something. Interruptions, where they occurred, were brief and did not affect the quality or focus of the interviews. I switched the recorder off during interruptions. During the interviews, I took brief notes on the participants’ emotions and body language and later integrated them in the transcripts. The in-depth interviews lasted an average of 48 minutes (range: 17 - 78 minutes) as shown in Table 0.3 (see Appendix 8, page 338).

5.5.2 Quantitative research: job embeddedness survey

After each in-depth interview, I conducted the quantitative survey for the measurement of job embeddedness.

Participants

For the quantitative research component, I used the same 50 participants whom I had just interviewed in the in-depth interview. I used the same sample in order to use the quantitative findings to triangulate the qualitative findings.

The quantitative questionnaire

After the in-depth interview, I gave each participant the brief self-administered 40-item questionnaire for the quantitative measurement of job embeddedness designed by Mitchell et al. [29, 522] (See Appendix 6, page 332). Filling it took the participants an average of eight minutes.

Process

The participants filled out the tool in my presence, just in case they needed to consult about any unclear question. Thereafter, I thanked each participant in appreciation for the time and information provided.

5.6 Data Management

Since I used qualitative and quantitative approaches, I managed the data differently, in line with the methodological rigour of each approach. In a similar

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manner to the preceding section, I describe the management of qualitative data separately from that of the quantitative data, beginning with qualitative data.

5.6.1 Management of qualitative data

At the end of each day, I copied the interviews of the day from the digital recorder onto my laptop computer with which I would move to the field, and saved a copy on a removable drive. I also wrote additional brief notes on the emotions that I had noted in each interview, if any. Although it would have been ideal to transcribe the interviews immediately after the interviews, I was only able to do it for 12 participants who worked in locations where I could access electricity. In other locations, the electricity supply was erratic. So, I concentrated on completing the interviewing and I transcribed the rest of the interviews when I returned to my base in Kampala or later to RCSI. I transcribed the interviews verbatim into Microsoft Word, (version 2007). I played the material on the computer using VLC Media Player (Version 2.1.3 Rincewind), a free and open-source media-player that is downloadable from the internet [692]. During transcription, I listened to the interviews using sound-muffled headphones for anonymity, to cut out external noise and to avoid disrupting colleagues in a shared office. On average, one hour of interview took me six hours of transcription. Transcription gave me a chance to get very close to the data because I had to replay the sections multiple times in order to verify the fidelity of the transcriptions. After transcription, I cleaned the data further by identifying and correcting spelling errors, separating my questions from the participants’ responses and ensuring that the concepts are clear even to a third party who would not have attended the interview. Then, I imported the transcribed interviews from Microsoft Word into QSR NVivo version 10, a commercial qualitative data analysis software [693]. I used QSR NVivo for data analysis.

As my analytic approach, I used iterative inductive thematic analysis as described by Braun and Clarke [694] and Thomas [695], and applied by Frith and Gleeson [696]. Inductive thematic analysis is an approach to analysis of qualitative data in which the data are read in detail to identify patterns that derive concepts, themes and even models or theories through interpretation of the raw data [694-695]. This
approach was consistent with the qualitative study design because it enables the researcher to get close to the data throughout the process. I read each interview line by line and identified codes (if any) for themes that I observed in each line. At times, I coded chunks of text under one code. For purposes of consistency, I prepared a definition for each code so that I could return to it if I needed to verify the classification of other data. As a result, I established a codebook with primary descriptive codes within NVivo. I would refer to the definitions if I was not sure of where to code particular content. After this, I started identifying themes in the data on the basis of the descriptive codes. I progressively aggregated the codes into higher-level overarching themes until such a point when I obtained stable themes. I did further analysis using the themes that I identified. Altogether, I did three rounds of coding. The first round of coding was light and produced very many codes. The second round coding produced fewer codes. The final round produced eight themes, which I discuss in the results. An example of the coding process is included in Table 0.4 (see Appendix 9 page 339).

5.6.2 Management of quantitative data

For quantitative data, I also used computer-aided analysis because I needed to do several analytical operations and draw charts. Initially, I created a file in Microsoft Excel 2007, and opened columns for identification data and each one of the variables in the 40-item tool. This became the data entry form and I entered the results per participant horizontally. Each row represented one participant. I performed multiple analyses on the data by copying the content of the primary worksheet to new worksheets for subsequent analysis. I used Excel to do most of my analysis and produced outputs like charts. Finally, for advanced statistical analysis, like regression, I used MedCalc® software (Version 14.12.0) [697].

The raw data on the different items of the job embeddedness construct were collected using a 5-point Likert Scale with the following range: Disagree strongly (rated 1), Disagree (rated 2), Neutral (rated 3), Agree (rated 4), Agree strongly (rated 5). However, Items on Links (on-the-job and off-the job) were assessed with questions that required either continuous (numerical) or categorical data (Yes/No).
To be able to include them in the analysis, I first transformed their responses into scores on a 1 – 5 scale similar to the Likert scale used for the other items. For items A1-A7 (numerical responses to Links-organisation questions, see Appendix 6, page 332) and items B5-B6 (numerical responses to Links-community questions, see Appendix 6, page 332), I rescaled the numerical figures linearly onto the 1 – 5 scale by applying the formula:

\[ f(x) = \frac{(b-a)(x-min)}{max-min} + a \]

Where

- \( x \) = the value to be scaled
- \( a \) = lowest point on the scale, in this case 1
- \( b \) = highest point on the scale, in this case 5
- \( min \) = the lowest value on the range of the data
- \( max \) = the highest value in the range of the data

For items B1 – B4 (Yes/No responses to Links-community questions), I converted all the “Yes” to 5 and all the “No” to 1. Having obtained the entire data set mapped onto a 1 – 5 scale, I computed the averages (means) for each individual on each of the six domains on the job embeddedness matrix (links-organisation, links-community, fit-organisation, fit-community, sacrifice-organisation, sacrifice, community). Then I used these averages to compute the overall embeddedness score for each individual, cadre, each sub-group based on the duration of service and an overall measure for all the participants. The degree of job embeddedness was measured on a 5-point Likert Scale, ranging through “Definitely not embedded” (rated 1.0), “Not really embedded” (rated 2.0), “Neutral” (rated 3.0), “Moderately embedded” (rated 4.0), to “Completely embedded” (rated 5.0). For correlation analysis of such data, I used non-parametric measures for ranks. So, I converted the scores into ranks and did the analysis on the ranks, and obtained Spearman’s Rank Correlation Coefficient. To compare the means, I used the t-test because the data set was small, with only 50 entries per item, and did not approach a normal distribution.
5.7 Methodological Rigour and Quality Control

I attended to the methodological rigour of each approach in order to ensure quality. I report on the approaches to quality and data security for qualitative data separately from quantitative data.

5.7.1 Qualitative data

The rigour of qualitative research is assured basing on two broad criteria: *trustworthiness* and *authenticity* [667, 698]. Trustworthiness focuses on ensuring confidence in the findings (the final product of the research) while authenticity tries to ensure confidence in the research process. I addressed both criteria in this PhD.

**Trustworthiness**

Trustworthiness is a measure of whether the research is worth paying attention to [614]. The criteria for measuring trustworthiness are credibility, dependability, confirmability and transferability. *Credibility* refers to whether any relationships reported to exist between factors in the study actually exist or whether they are spurious observations mediated by other contextual factors [699]. Guba [667] and Krefting [668] recommend several strategies to ensure credibility, applicable at various stages in the conduct of the study. These include prolonged engagement with the phenomenon, time sampling, reflexivity, triangulation, member-checking, peer examination, interview technique, establishing the authority of the researcher, structural coherence and referential adequacy. Although all of them are important for credibility, it is not expected that they can all be achievable in the same study [668]. I describe only those that I ensured. In this study, I engaged with the phenomenon for over five years, because I selected the topic one year before commencing the course in 2010. I addressed time sampling by interviewing participants recruited over a long period of time.

I addressed reflexivity, by being constantly aware of the potential biases that I came with into the study. I have declared them in the section on Researcher Bias (see page 140). I kept myself alert to the development of new biases developing during the data collection and analysis processes. I ensured that the interviewing techniques were favourable to the participants by using plain English during the
interviews, repeating, paraphrasing and simplifying the questions whenever a participant showed signs of not having understood a question. I conducted all the interviews personally and in English. I allowed introductory courtesy talk to build rapport, without losing focus of the objective of the interview. I also probed for specific issues I had included in the topic guide for the in-depth interview (see Appendix 7, page 334). To establish my authority and preparedness for this study, I undertook a series of short operational courses in qualitative research, use of Computer-aided Qualitative Data Analysis Software (CAQDAS) specifically on the use of NVivo® software Version 10 [693], and some quantitative skills. Some were organised as part of the PhD course.

I triangulated sources, methods and researchers. For sources, I interviewed the participants in different staff cadres and settings, as well as reviewing multiple national and international policy documents and reports on the issue of HRH retention in rural and remote areas, as part of the literature review. I triangulated methods by using in-depth interview and questionnaire interview methods and combining the findings. I compared findings on the same topic, looking for confirmation or disconfirmation. The survey questionnaire (see Appendix 6, page 332) is the original pre-validated data collection tool for the Job Embeddedness construct. As it is said that the qualitative researcher is also the research instrument [700-701], I verified participants’ accounts of challenges faced due to remoteness and difficulties of accessing their work stations when I personally travelled to the different locations for the interviews. I triangulated researchers at all stages by sharing the drafts of the proposal with my PhD supervisors and my peers at Uganda Martyrs University and RCSI. During analysis, I shared the findings with my PhD supervisors at all stages of the analysis and they served as my peer examiners. I ensured structural coherence in the analysis, interpretation and reporting of the findings, by looking for any contradictions and looking for their explanations whenever I noticed them. I also looked for possible rival explanations for the findings. To ensure quality of the data, I labelled the sound files with unique codes immediately upon downloading them from the recorder, to avoid mixing up the data. I also replayed the voice record several times over during transcription and
after transcription to be sure that each transcript matched its voice record. I cleaned the transcripts for spelling accuracy.

To address dependability, I created a file (a case study database) of proposal drafts (how they changed, when and why they changed), memos, my field notebooks, and the anonymised filled questionnaires and transcripts for potential audit trail or secondary analysis. To ensure confirmability I use verbatim quotations from the participants extensively to illustrate their exact descriptions of issues, with references to the place and source of the data. I offered the participants the option of member-checking but they all declined and waived their right to review the transcripts. Two main reasons for this waiving were a shortage of time to do further verification, and poor communication which would hamper the feedback process for most of them. To ensure transferability, I give fairly extensive details on every aspect of the study, starting from the description of the context of the phenomenon in Chapter 1 (see page 28) and through the methodology. I continue with similar extensive description of the findings in the subsequent chapters, in the hope that the descriptions are sufficiently detailed (“thick description”) to enable the reader to understand the phenomenon, the rationale and process of the study. I hope that level of detail of this PhD thesis will give a feeling of déjà vu to readers who might be familiar with the issue of shortage of health workers in rural areas of developing countries.

Authenticity
Authenticity refers to how the study actually contributes to the betterment of the situation being studied i.e. whether it provides solutions to the problems, beyond the immediate deliverables such as a report. It is a test of whether using the findings from the study can genuinely bring about change in the problem under study i.e. whether the participants (the researcher and the researched) become change-agents after the study [698]. It has five components: fairness, ontological authenticity, educative authenticity, catalytic authenticity and tactical authenticity. I ensured fairness by giving equal platform to all the participants irrespective of their views and whether I agreed with them or not. I ensured that I have at least
one quotation from each participant and included their views in other sections without quotations.

I attained **ontological authenticity**, the raising of the awareness of the participants (and the researcher) about the complexity of the issue under investigation, by getting enlightened on some new reasons why the health professionals stay in rural areas. Many of the participants also said that it was the first time ever anybody asked them for the reasons they have stayed in rural areas. Many of them were very excited to recall the days when they first went to work in the rural areas and to be given a chance to speak about them. The interviews made them make analyses that they said they had never made before. My perspective to the phenomenon was also enriched by the happy finding that some of the health workers were in the rural area willingly and for professional reasons, rather than being “stuck” (although, indeed, some reported being stuck there). These explanations enabled me to understand and respect the views and choices of the participants even more, I included them irrespective of whether I agreed or disagreed with them, thus ensuring **educative authenticity**.

With this study, I have also achieved **catalytic authenticity**, the provocation of the study participants into action to address the problem, after their shared knowledge of the issue, and their understanding, appreciation and sympathy of each other’s views have increased [698]. As a researcher, I now feel empowered with extra knowledge to take action on the issue of access to qualified health workers in rural and remote areas through policy advocacy, international publication of the findings and national level dissemination. Some of the older participants had already planned to retire in the environments near the hospitals, even if some of them did not originate from there. This meant that they had already taken action to stay in those rural areas, even if they had options to go and settle in other places or back to their original homes. Several of them also thought of starting private health services, to increase access to care for the population. It is still too early at this stage to measure the impact of this study on the problem (**tactical authenticity**), but the study certainly had some effect on both the participants and me, as the
researcher. In my case, I look at health workers in a new light, after confirming that not all of them are in rural areas for incentives.

5.7.2 Quantitative data

For quantitative data, there are four key concerns of quality control: construct validity, internal validity, external validity and reliability [649, 665]. I addressed them by using the 40-item tool, which was already validated. In addition, the tool was already confirmed to be applicable in multiple cultural settings [29, 517, 519, 522, 586]. Therefore, there was no need to test it afresh. The previous studies served, in a way, as pre-testing sites for me. Moreover, I contacted the originators of the tool (specifically, T. R. Mitchell) and they confirmed their recommendation to use the tool unchanged in diverse circumstances. They have recently further confirmed this recommendation in a published paper [517].

5.8 Data security

I managed data security in a similar manner for both qualitative and quantitative data. For qualitative data, I labelled the voice data files serially according to the codes I had assigned the participants upon downloading them to the laptop from the digital recorder. After transcription, I used the same label to identify the transcripts. For quantitative data, I labelled the questionnaires serially with the same code used for the qualitative interview as soon as the participants completed filling them. After entering the data in Microsoft Excel, I saved the spreadsheet file together with the transcripts. I protected individual transcripts and the spreadsheet file with passwords only known to me.

I labelled hard copies of the questionnaires and consent forms serially with codes whose meaning was only known to me. Since the consent forms bore the identification of the participants, I kept them separately from the rest of the interview material. I photocopied the hard copies of filled consent forms and survey questionnaires. I kept copies at my home in Kampala, Uganda, and at my office at Uganda Martyrs University under lock and key. For soft copies of the data, I opened a folder on the back-up drive of my laptop computer, specifically for keeping interview material, and saved each interview and the data files for the quantitative
survey. I also made multiple soft copies of the records and kept them in different places, under lock and key, on both fixed and removable hard drives. I kept one set each at my office at the RCSI, my residence in Dublin, my home in Kampala, Uganda, and my workplace, at Uganda Martyrs University. I was unable to encrypt and store the data in the RCSI database as I had initially hoped because of the institutional policy restricting external equipment and data. (Since I was self-sponsored, I did not have access to an institutional computer. Therefore, I used a private computer, which was not allowed to connect to the institutional database. Since I needed to access the data very often, it would have been very difficult to access them as and when I needed to). However, the back-ups ensured that I would access the data in case of problems. I updated my backups regularly.

5.9 Researcher bias

Researcher bias is a significant risk in qualitative research [702-703]. However, this study used the pragmatism paradigm, which believes that it is important to apply “what works”. Constructivist elements, e.g. co-constructing research findings between the researcher and the participant [628, 704], and the researcher being part of the instruments of information generation [628, 700], are tolerated. Nevertheless, I was aware of my potential biases that could have affected the quality of the study. By way of axiology, therefore, I was aware that my personal values are reflected in this PhD, especially the qualitative component, in several ways. However, to minimise them I first identified and analysed my previous knowledge of the rural reality of health workers, put it aside, and looked only at the participants’ narratives. This enabled me to become immediately aware whenever my personal knowledge or experience of the rural area would threaten to influence my interviewing or analysis. The first possible source of bias is the choice of the topic. Having been born, raised and educated in a rural area, having a Christian background, and having worked in rural areas for long as a medical practitioner, Public Health specialist, researcher and teacher, gave me a specific ethical stance from which to approach the problem of retention of health workers in a rural area. I always looked at the issue as a matter of social justice. To be sure that that the
topic is of general concern and not mine alone, I verified with ample international literature and confirmed that it was a matter of current and global concern.

My background also gave me prior understanding of the situation of health services in rural areas not only in Uganda but also other developing countries and some developed countries. In a way, I had “rural lenses” through which I perceived the problem. Certainly, this made me take sides in the study. I sided with the rural health workers and I had to constantly check my position when it came to asking about matters regarding central level policy-makers. This was my way of showing sympathy and empathy to the situation of rural health workers who raised rural retention as being a problem although I did not, personally, perceive it like that. My overriding concern was the health of the rural residents. During the interviews, I had to restrain myself to the role of interviewer and even ask questions whose answers I knew in advance. This became increasingly necessary as I started reaching the saturation point. I had to let the participants’ views come through, all the same. Therefore, I tried to keep my views out of the study, but it is hard to eliminate them completely because, ultimately, I selected the quotes to include. During the analysis, I still had to do the same and stick to interview material. My personal views are, generally, reserved for the discussion chapter. I report the qualitative findings according to the BMJ guidelines on reporting qualitative studies and several other relevant guidelines [705-709]. I integrated quantitative data according to several guidelines for mixed-methods research.

My gender could also have brought some bias. Being male while most of the participants were female could have influenced our interaction. Although I tried to be neutral in my approach to the participants, I can only hope that the effect of gender difference was completely erased by my comportment. Another potential source of bias was my profession. Being a medical doctor while some of the participants were doctors and the rest nurses, could have introduced bias in the study due to the power differences between me and the nurse participants, in a male-dominated conservative health system like Uganda’s, where males occupy the high positions and females occupy lower ones. However, since I did not work in the same hospitals as the participants at the time of the study, I hoped that this effect
would not be strong. I could have addressed these problems by recruiting research assistants of similar cadres and gender like the participants but I would have lost the personal experience of being close to the data right from the moment of their generation. Since qualitative findings are co-constructed between the researcher and the participant, this would have been a serious gap in the quality of the study. Therefore, coupled with inadequate resources to recruit the assistants, the trade-off was in favour of me conducting the interviews personally. The only suggestion that this could have been at play is in the duration of the interviews, where interviews with doctors had a longer average duration than those with nurses, probably due to the participants’ comfort to discuss matters at length (see Appendix 8, page 338). However, if one removes outliers, their average duration was similar.

My profession could also have introduced bias because I knew some of the participants personally beforehand, and this could have influenced the scope of the issues discussed, thus bringing differences in content. Some of them had been my students. Others had been my colleagues on various committees and other duties or we had a number of other historical contacts. This meant that I knew some of their histories better than those of the ones I had not known before, and the level of interaction could have been different. In terms of rhetoric, constructivist elements of pragmatism require that researchers highlight their role and involvement in the research. Researchers should own their work by reporting using the first person, in singular or plural. This enables the researcher to show his/her deep and inseparable involvement in the study to the reader. In this study, I also mainly use the first person in singular to indicate my role and ownership of this work or in plural to indicate that the findings and meanings were generated with the participants, and that the study proposal, analysis and report were produced with the support of my supervisors.

5.10 Ethics considerations

Since this study was predominantly qualitative, I focused on addressing the ethical concerns in qualitative research. Although qualitative research is generally perceived to have no or little probability of causing harm to research participants, the potential to cause harm actually exists, only that the harm is often not physical.
Richards and Schwartz [710] identify five types of harm that can result from qualitative research. They are: anxiety and distress; exploitation; misrepresentation; identification of the participant; and inconvenience and opportunity cost. As a result, Richards and Schwartz recommend preventive remedies for these harms, which include: scientific soundness; provision of follow-up care for the participants; informed consent; respondent validation; and confidentiality. To verify the scientific soundness of this study, I sought and obtained ethics approval to conduct the study from the Research Ethics Committee (REC) of the Royal College of Surgeons in Ireland (RCSI) (see Appendix 12, page 343, for Notification of Approval for REC804) and the Ethical Review Board of Uganda National Council of Science and Technology (UNCST) (see Appendix 13, page 344, and Appendix 14, page 345). I also received the final clearance from the President’s Office in Uganda, but decided to leave it out of the appendices because it reveals details of the districts and hospitals, which would breach the anonymity of the participants. However, it is available for inspection.

My entry protocol into the hospitals required me to pass through the power structure of the hospital. For government hospitals, presentation of letters from the two very high government offices was enough to allow me in. For faith-based hospitals, I obtained the telephone contacts of the hospital managers from their umbrella body, and this could have suggested to the managers that the study had been blessed from their higher authorities. To reach the individual participants, I made appointments through the hospital managers, who I gave a letter of introduction, requesting them for permission to conduct research in their hospitals (see Appendix 15, page 346). They all gave me their permission, some verbal and others, written. I have not included the permission letters in order to preserve anonymity of the hospitals and, hence, the participants. However, they are also available in case of need for auditing.

To obtain the participants’ consent, I provided each participant with a Participant Information Sheet officially requesting for the interview and permission to record the interview, as well as providing other essential information about the study (see Appendix 4, page 328). I also gave each participant two copies of the Informed
Consent Form (see Appendix 5, page 331) to sign as confirmation of acceptance to participate in the study. I countersigned the two copies of the Informed Consent Form and gave one copy to the participant to keep, together with the Participant Information Sheet, while I kept the other. All the health workers who came consented to be interviewed but, although they all confirmed to have participated willingly, it is hard to rule out a possibility that they accepted simply because they were requested to participate by their local superiors. Therefore, the use of gatekeepers for selection of the participants could have had an effect on who was selected and what they said.

To ensure confidentiality, I also did all the interviews, observations and transcription personally, thus leaving no room for knowledge of the content of the discussions by any other person. I kept the materials safely locked away from access by anybody else except me. To preserve anonymity, I removed all identifying information on the transcripts and replaced them with codes only known to me. In addition, I removed all potentially identifying information in all the extracts that I included in the report and used codes to highlight the sources of the data.

5.11 Conclusion

In this chapter, I have described the different aspects of the methodology used in this PhD thesis. I described the philosophical underpinnings, from its mixed methods paradigm of pragmatism, through research design to the tools used for data collection and information generation. I have also addressed the quality control, ethical issues and study limitations. In the following three chapters, I present the findings of the study. Chapter six presents the findings on factors affecting the attraction of the retained health workers to rural areas, which are wholly qualitative. Chapter seven presents the factors affecting the job embeddedness of the participants and the results of the measurement of the degree of job embeddedness. Therefore, it has both qualitative and quantitative components. Chapter eight presents the factors affecting the retention of health workers in rural and remote areas, and it is qualitative.
6 FINDINGS I: ATTRACTION TO RURAL AREAS

6.1 Introduction
In this chapter, I present the qualitative findings on the factors that attracted the participants to the rural area. The chapter starts with a brief summary of the participants’ key demographic characteristics, followed by the findings and analysis. I present the findings in three sections, beginning with the factors that influence participants’ choice of rural practice of their own volition, followed by choices made under constraint and end with those made out of obedience to authorities. After each section, I give my analysis of the reasons identified and the themes I perceive to underlie the reasons. I close the chapter with an overall synthesis of the themes from all the sections.

I interviewed 50 participants, whose characteristics are shown in Table 6.1. The table shows that the majority of the participants were females, mostly less than 50 years, and mostly nurses. The majority of the participants were married and had rural birth, upbringing and primary education. However, most participants had urban secondary and professional education. The majority of the participants worked in government facilities.

6.2 Rural practice by choice
Several participants chose to practise in rural areas, even when they felt that they had options to work elsewhere. There were many reasons for this choice, which I categorised according to the primary motive as stated by the health workers. I allocate them to sub-themes, which later merge into themes. The main reasons stated for freely choosing to work in rural areas were: to have clean air and good health; familiarity with the rural area; the desire to be near their homes and relatives, to build or maintain family unity; desire to start or to be near their economic investments at home; to take up a higher position tenable in a rural area; and to be in a location where their status or service is appreciated or can be enhanced. In the next section, I describe these reasons further, give the evidence for them from the study and the themes that I drew out of them.
Many participants preferred to work in rural areas mainly because they believed that they would have a cleaner and healthier atmosphere, compared to urban areas. They felt that rural areas were better for their health. This conveyed a theme of health workers wanting to be in places where they feel healthy, safe, and that enhance their health. This desire was mainly mentioned by those who were older and those who preferred a quiet life:

“It is natural. We are away from this noise of yours in Kampala. ...No tear gas! ... No pollution! It is natural! We are away from noise. It is natural! (NA9, Registered Nurse, Hospital C).

Another major reason for many participants wanting to be near rural areas was a desire to be in familiar environments. Several participants wanted to be in rural areas where they originated from, in order to be near familiar people and relatives or to be in familiar social circumstances, such as people of the same faith, and to be in places where they could do familiar activities like digging. Some participants even felt inseparable from a rural area. Some other participants felt they had to work in rural areas because they were better adapted to them than to urban areas, due to having grown up in the rural areas, and that life was cheaper and more manageable in the rural areas:

“...there are advantages and disadvantages of being in rural and urban [areas]. For me, really, I never wanted to be in towns...No! Though I can go there for holidays... but, me, I don’t like towns. (Laughs) I am a village girl! (NA16, Registered Nurse, Hospital L)

And:

“When they posted me to ..., I never found any problem. I expected that since it is a rural area...I would get land and dig and get my own food. So I wasn’t bothered so much”. (NA7, Registered Nurse, Hospital C)

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18 Tear gas was used to quell riots in the city at the time of this study, with the images broadcast on news media and the rural public believed that it was a regular feature of urban areas.
Table 6.1 Description of participants by key characteristics

<table>
<thead>
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<th>&gt;10 years</th>
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<td>M  F  Total</td>
<td>M  F  Total</td>
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<tr>
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<td></td>
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<td>16 0 16</td>
<td>17</td>
</tr>
<tr>
<td>Nurses</td>
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<td>21 3 24</td>
<td>30 3 33</td>
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</tr>
<tr>
<td>Sub-total</td>
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<td>46 3 49</td>
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<table>
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<th>Nurses</th>
<th>Sub-total</th>
</tr>
</thead>
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<td>35 19 31</td>
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<th>Nurses</th>
<th>Sub-total</th>
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<td>12 15 18 29 47</td>
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<td>Urban</td>
<td>Sub-total</td>
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For a number of participants, the rural area was their choice because it was the most familiar environment they knew and preferred. It was near their home of origin and would not involve making new adaptations:

I am born from around and this is a hospital I have been seeing since my childhood. And I used to admire nurses and doctors. And when I went for training, I wished to come and work from near home. That is how I came to know this place, as a rural area, where I grew from. (NA4, Registered Nurse, Hospital I)

Other participants did not mind being in a rural area as long as it had people with whom they could associate on specific values such as belonging to the same religion:

“And, probably, the other thing here is that I thought that I was coming to a community which is predominantly, you know, [religion], where I belong and I thought that I would not find it very difficult to cope up with”. (MA8, Medical Officer, Hospital F)

Other related reasons for wanting to be in the rural area were to be near their homes in order to be able to get food and financial support from their families. Some participants had relatives at home who could support them. Such participants therefore found it easy to choose the rural area without need for prompting, simply because they feel they belonged to the rural area.

Some participants wanted to be in the rural areas because they would be near their existing or planned economic investments. The investments included forest and cash crop plantations, and business activities like dealing in wholesale or retail of produce, like sesame or coffee. Several participants owned small shops while others had investments in real-estate development and construction. In general, very few participants (8/50) owned active health-related businesses or services such as hospitals, nursing homes, medical clinics or drug shops of their own or worked in such businesses for side-income. Several other participants reported to have, previously, started healthcare-related businesses which later collapsed due to poor
location (either too close to the hospital in which they work, or too far from their workplace, thus rendering management difficult); poor management (being too far, they employed other health workers, who did not do a good job); and a weak general economy. Generally, many participants felt that health-related businesses required heavy capital investment, a lot of time and good management, and yet did not generate a lot of income. Only one participant (MA7) mentioned doing large-scale commercial agriculture in the rural area.

In a few cases, rural areas offered job opportunities with better salary than urban areas. This was true for those who got jobs sponsored by non-government organisations (NGOs) to work in faith-based facilities, or when the government salaries were made significantly higher than those in faith-based facilities. Such participants did not mind their location as long as their salary was better. In the case of those who joined government facilities, they did not mind the location as long as they got on the government payroll, because of other presumed benefits of being a government employee. Desire to take up senior positions also drove some participants to choose rural areas. Some of them had reached a position beyond which they could not advance in their previous hospital because there was no vacancy. When a new opportunity arose in the rural area, they decided to take it (e.g. NA20). Others simply had a strong desire to be in senior positions, even if they were still very new in the profession. When the opportunity for such a position came up, they took it up, even if it meant going to a rural area with significant constraints. Location was a secondary consideration for such participants:

“...I said: “Ah! To become a Medical Superintendent after internship? That is very good!” .... I would be entitled to a vehicle and, then, accommodation. ...and that took me! ... It is a village! ....we needed ... an army escort...there was no tarmac .... the main thing that was taking me was that I was going to be a Medical Superintendent....To me, it was a path to move to something else”. (MB3, Medical Officer, Hospital K)

Some participants went to the rural area because it offered them a chance to become visible or get noticed and/or appreciated. It was an opportunity to enhance
their status in their local community. By going to the rural area, such participants sought to escape the competition for social status in urban areas where there are more educated people than them. They preferred the rural areas because they felt that, being more educated, they would have competitive advantage over less educated fellow rural residents. Rural areas offered them a chance to be opinion leaders and points of reference for the community. For others, the rural areas offered a place where their services can be appreciated by the users and the society. Such participants felt that urban communities do not appreciate the work of health workers and preferred the rural areas because there is less competition for social status, and this gives them the chance to feel on top of the social ladder:

“Like in my village, they would just look at me as the only person! ....if you work in urban areas, people will not see you, they will not appreciate! ...I felt I need to be in the village to be noticed and appreciated! ... I would feel ... self-motivation! Internal motivation! I would feel I am happy (gets really excited) (NB4, Registered Nurse, Hospital G)

And:

“...in places like Mulago, ...they have better books [education] than you! But here in a rural area, people are just looking at you. It is as if you are the only one who went to school! ...some of them come to me to ask:

“Is it true, really, that this thing is like this and like this?” So when they hear from me, they say: “It is true! Even so and so’s daughter says it is like this”! (laughs) (NA19, Registered Nurse, Hospital G)

Other participants preferred rural jobs because they are less competitive. According to them, urban jobs have stiff competition from many fresh graduates. Those who did not want to join this competition preferred rural jobs. It is not clear whether the main reasons for avoiding competition for urban jobs was related to a lack of confidence or just that their interest in urban areas was not particularly strong. In addition, competition was stiffer in urban areas than rural areas for other potential benefits, such as opportunities for sponsorship for further studies. Moreover, some
of them had noticed that the staffing situation in rural areas was very unstable and there was a high staff turnover rate. Therefore, they went there strategically to become stable and increase their chances of benefitting from opportunities for sponsorship for further studies given to stable staff, because they would be seen as dependable employees:

“.. the chances of going back to study are high because ... unlike in the urban setting which, I should say, is crowded and the competition is stiff. ... And the stability of the staff [here] is not that good. I think we have been stable and I have had those chances”

(NA15, Registered Nurse, Hospital L)

Some participants opted to work in the rural areas because they wanted to show the good in them to their community. One participant wanted to show that, though rural, her home area had produced a person useful to society. Having worked in other places and provided services which were appreciated by others, the participant also wanted to take the same services to her people because she felt she could make a helpful contribution to them. Another participant went back to the rural area to prove his goodness to an organisation that has not supported him because others before him had not honoured return of service obligations:

“So, I spent most of my time in Kampala ....... but my people were this way! .... And when I discovered that I was doing good..., I decided to come and ...work for my people in this area....At first I had feared to come this way because all along they had been saying that a prophet will never be popular in their home area. When I found that it was not true, then I decided to come.” (NA18, Registered Nurse, Hospital G)

And:

“The very one who did not benefit, he came back! People were surprised and said: “What is this?” ..... It was my personal decision. I wanted to send a message to other people that: “Not everyone is bad!”” (MB5, Medical Officer, Hospital B)
Only seven participants in this study (all of them doctors: MA2-3, MA5, MA8, MA10, MA12 and MB2) were attracted to go to rural areas by a promise of incentives. All of them followed specific promises of incentives e.g. sponsorship, good housing, an official car with fuel, and three others followed promises of better salary. A number of participants said that the main reason they opted to work in rural areas was to be in an institution where they could have the opportunity to practice their profession and learn even more skills and procedures, which they did not have in urban areas. This was because there was a shortage of staff (giving them the opportunity to practice a wider scope of practice, including what others would have done) or because there were potential mentors in those facilities. This reason was more common among health workers in non-government hospitals:

“So, that is how I went there. One, because, one was looking for an opportunity of working in a bigger hospital to get exposure – better exposure, ... I needed to be in a hospital. .......... I would get more colleagues to work with. Here we were doing lots of work! ....Real, real medicine! ...” (MA12, Medical Officer, Hospital L)

Some participants felt a vocational pull to serve patients and felt that it was only in the rural areas where they could provide such services, because they were convenient and provided proximity to the patients. The driving force behind such choices was professionalism, which some participants claimed to have acquired during professional training, especially pre-service training, and their early years of practice. They claimed to have acquired this from their pre-service training

“When we joined nursing, for us who studied some time back, they told us it is a devotion and a vocation! So, it entered in me, maybe, that it is not a matter of looking for money but to help people! That is what is in me! .... There are times when people tell me: “What are you doing in that hospital? Are you girl charmed?” I say: “No!”... Me, I want bedside nursing, to nurse my patients!” (NA16, Registered Nurse, Hospital L)
And:

“Your patients keep you busy, caring for them....You cannot become so lousy like in the other places... That you are leaving one nurse to work and you go for your own things. The patient is your centre. So, that is why I chose to be in this rural area to care for patients – mainly to be with them” (NA3, Registered Nurse, Hospital I)

Themes from the section and relation to job embeddedness and retention

This section has illustrated that some health workers retained in rural and remote areas made choices to work and live there out of their free will. The main driving force underlying their choices was a desire to meet their needs. Therefore, the main theme that I got out of the section as being the key reason for health workers choosing to work in rural areas was “Meeting needs”. From the findings, the needs can easily be traced along Maslow’s hierarchy of needs [711]. Some participants wanted to meet basic physiological needs, like being able to get food easily from their homes; others wanted to meet safety needs like wanting to be in familiar environments and doing familiar activities, or to be in healthy environments with fresh air; others sought to meet love needs by wanting to be near their relatives and/or friends and families; others targeted to meet their esteem needs by looking for opportunities for career advancement through obtaining higher positions in the rural area, practising professionally or going to places which could offer scholarships for further studies; and yet others wanted to meet their self-actualisation needs by showing that they are good people, useful and capable of solving other people’s problems or even giving back to institutions that did not support them when they were in need. All these choices seem to be centred on fulfilling personal goals, hence they can be categorised as “personal goal choices”.

In addition, all these choices were made freely with no feeling of pressure from anyone. Hence they may be categorised as “free choices” compared to those which participants made under pressure. In summary, one can say that the participants had five main reasons that made them choose to work in rural areas: health and comfort, feeling useful, visibility, earnings, and familiarity as summarised in Fig. 6.1.
Fig. 6.1 Thematic map of reasons for free choice to work in rural areas

The sub-theme on familiarity, kinship and inseparability addresses Maslow’s levels on physiological, safety and love needs. The sub-theme on health and comfort addresses the levels on physiological and safety needs. The sub-theme on professionalism addresses the level on esteem needs. The sub-theme on visibility addresses the level on esteem needs and self actualisation. The sub-theme on earnings addresses almost all the levels on Maslow’s hierarchy.

From a perspective of job embeddedness, the reasons under the sub-theme of “visibility” generally fall under on-the-job fit and on-the-job sacrifice. The participant would have been retained in order to maintain his/her visibility due to strong on-the-job concerns. The reasons under the sub-theme of “earnings” fall under off-the-job sacrifice and on-the-job sacrifice. The participants would have been retained because they had a lot to sacrifice by leaving. The reasons under the sub-theme of “professionalism” mainly fall under on-the-job links, on-the-job fit and off-the-job fit. The participants would have been retained because of strong job-related reasons. The reasons under “health and comfort” fall under off-the-job sacrifice, while those under “familiarity, kinship and inseparability” fall under off-the-job fit, off-the-job links and off-the job sacrifice. The participants would have been retained due to strong off-the-job reasons. The next section discusses choices
made under conditions in which the participant felt some form of pressure to make the rural practice choice.

### 6.3 Choices under pressure: Pragmatism and strategy

In this section, I describe and illustrate the choices to work in rural areas, which were made under different forms of pressure. Thereafter, I make an analysis and identify the themes I consider to be present in the data. If they had had a choice, the participants would have stayed in urban areas or emigrated but they made a pragmatic choice to go to rural areas in the face of the prevailing circumstances, as a strategy to manage those conditions which were beyond their control. From the interviews, it was clear that the majority of the participants went to the rural areas because that was where they could find the jobs they were qualified for. This was more so after the 1997 passing of the Local Governments Act [712]. Among other effects, the Act decentralised government functions by creating the district as a legal level of government, with a mandate to manage district affairs (including recruitment and posting of staff). As a result, the majority of the participants in this study were recruited by the District Local Governments (DLGs), as shown in Table 6.2.

**Table 6.2 Participants by employer recruiting agency, cadre and duration of service**

*Nb: In this study, all the non-government hospitals belonged to the Catholic network*

<table>
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<tr>
<th>Employer</th>
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<td></td>
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</tr>
<tr>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Ministry of Health</td>
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<tr>
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<td>1</td>
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</tr>
<tr>
<td></td>
<td>NGO</td>
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<td>1</td>
</tr>
<tr>
<td></td>
<td>Total</td>
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The table shows the progressively important role of local levels in the recruitment of staff. In government hospitals, recruitment has been taken over by the district, as shown by the complete absence of centrally-recruited health workers among those who have served for 3 - 10 years. At private hospitals, recruitment is done by several levels. Nurses are recruited locally at the hospitals while the diocesan levels
and NGOs participate in the recruitment of doctors. The need for involving the higher diocesan level and NGOs probably reflects the difficulty of attracting doctors to the very remote areas where the faith-based hospitals are usually located, hence requiring higher levels of authority to negotiate incentive packages.

Many participants opted to go to rural areas because that is where they could get a government job. Government jobs had a number of advantages perceived to be associated with them like job security, free time, pension, and scholarships. However, some participants chose to work in rural areas in order to be on the government payroll, with a view to go for further studies after a short while, knowing that they will not be deleted from the payroll and some others thought that after getting on the government payroll, they would manouvre and be transferred to other places of their convenience:

“...Then the other thing, also, most young men these days want to join government. When they are studying, they remain on the payroll......
You work for the government, go to [hospital name] go to where, then apply for Masters and remain on the payroll”. (MA11, Medical Officer, Hospital H)

And:

“Actually I wanted to join government services so that in future when you are going to study they don’t remove you from the payroll. You still earn your salary even when you are at school”. (NB1, Registered Nurse, Hospital E)

Government jobs were associated with job security because it is not easy for an immediate supervisor to dismiss an employee. The procedures for dismissal are long, tortuous and often unsuccessful. Dismissal is, therefore, very rare. This is unlike in the private sector where an immediate supervisor might be the final person and dismissal of staff is easy and common. In addition, government jobs assured employees of some social security in terms of pension. A few government
employees did not believe that social security in government jobs is guaranteed, though:

“Our job is secured because we are confirmed. We are permanent and pensionable!” (NB5, Registered Nurse, Government employee in Hospital G)

And:

“Government appointment is reliable because the nature of appointment is “permanent and pensionable”. .... However, of recent... you find, mysteriously, some health workers were missing on the payroll...... There is no proper explanation. .....And that removes the old thinking of “permanent and pensionable” and “well-assured”! ..... (MB2, Medical Officer, Hospital E)

Several participants reported that they opted to go to rural areas in response to government’s pro-rural policies which encouraged health workers to go to work in rural facilities. For some time, government officials had made verbal statements to the effect that they would like to have more health workers in rural areas and that they would give priority to rural health workers in the allocation of scholarships for further studies. Although such statements were not accompanied by written commitment or confirmation, they were made by high level government officials, which rendered them credible for the health workers. Although no nurse participant mentioned having received such a promise as the reason to serve in a rural area, several doctors (MA2, MA5, MA8, MA10) claimed this to be one of their key reasons for going to work in rural areas. In the end, though, the pledges were not fulfilled and, while some health workers opted to stay in rural areas, others had left in protest:

“...during that induction, there were those promises that people who work in rural places .....stand a high chance if they applied for postgraduate studies. They will be considered for scholarships first.
….. we used to receive the [officer’s title]... and we would get... such from him”. (MA8, Medical Officer, Hospital F)

And:

“...even the government had that .... policy ... They wanted medical officers to go to the rural areas.... for two years, you are considered first to go for .... Masters. So, we were also encouraged by that, and many of us came around. ...we were about seven doctors. .... although now we are two! But that ...policy changed a bit. They relaxed. People also gave up coming upcountry....” (laughs) (MA5, Medical Officer, Hospital G).

Some pro-rural policies also promised better salaries, financial support and assistance with transport for self, family and property to resettle transferred officers. The Ministry of Health actually used to provide physical transport to shift staff. However, that system broke down and was abandoned completely after decentralisation, when recruitment started taking place mainly locally within the districts. However, most government promises were not fulfilled:

“But when I was coming, they said they would give me transport and ...a sort of “Disturbance Allowance” ....But later on, I was disappointed because ....It didn’t come! (laughs). But the fact is, I was transported. I was given a ... lorry, which transported me from [previous station] up to here, with my family. There was no other promise” (MA7, Medical Officer, Hospital J).

And:

“ ........Well, a lot of promises! ... a top-up of 350,000 [~€100], there is always a vehicle, ...fuel, I can drive, I can go anywhere at any time... what they wanted was me to go there and serve! However the promises were not fulfilled! ....The only normal vehicle which was there was the ambulance! It is very odd to go to [home district] with an ambulance!” (MB2, Medical Officer, Hospital E)
For some participants, the reason for going to work in the rural area was to offer service in return for opportunities received in the past, especially scholarships for their professional studies. The sponsorship was for courses at different levels ranging from Certificate in Nursing to Specialist Masters degrees. Four different sources of sponsorships could be identified from discussions with the participants: self-sponsored, Government of Uganda (GOU), partners known to the individual e.g. NGO hospitals, and partners of the Government of Uganda as shown in Table 6.3. Funding from the partners of the Government of Uganda was mainly from bilateral and multilateral donor agencies. NGOs channelled their support through dioceses, congregations or universities. The participants had received support from different sources at different stages in their career.

**Table 6.3 Sources of sponsorship for the participants' professional training**

NB: Partners of the health workers were NGOs which gave direct scholarships. *GOU = Government of Uganda. **Partners of GOU = bilateral or multilateral agencies

<table>
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<th>Source</th>
<th>Cadre by duration of service</th>
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<td></td>
<td>Medical Officers</td>
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</tr>
<tr>
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</tr>
<tr>
<td>Partners known to the health worker only</td>
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<td>1</td>
</tr>
<tr>
<td>GOU* only</td>
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<td>1</td>
</tr>
<tr>
<td>Self + GOU</td>
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</tr>
<tr>
<td>Self + Partners of the health worker</td>
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</tr>
<tr>
<td>GOU + Partners of the health worker</td>
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</tr>
<tr>
<td>GOU + Partners of GOU**</td>
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<td>2</td>
</tr>
<tr>
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<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>12</td>
</tr>
</tbody>
</table>

In some cases, return of service practice was a condition for the sponsorship but in many cases it was optional. Most of the participants had studied from Uganda, although a few had studied from abroad. For example, one participant received sponsorship for both undergraduate and postgraduate medical studies in Europe. Some of the participants had written bonding agreements while others did not, but it was understood by both the sponsor and the recipient that they would go back to serve in rural areas. All recipients of funding from the Government of Uganda and its partners were neither bonded nor obliged to serve the government in rural
areas or anywhere in the country. Serving the government and in a rural area was their choice.

However, recipients of support from private partners were mostly bonded and required to serve in rural areas. Therefore, their presence in rural areas was a return of service for previous sponsorship, and hence, a conditional choice19.:

“At that time, African countries were all getting independence .... they did not have enough persons to occupy positions of leadership. I knew I was expected to be a leader and to fill that gap of trained health workers”. (MA1, Medical Officer, non-government Hospital I)

Some participants went to the rural area to escape personal problems encountered at work or at home in urban areas, because they saw rural areas as safe havens. The problems mentioned included unpleasant marriages in the case of four female participants, and sexual harassment at the workplace in the case of one female participant. At the time when transfers were still centralised, the participants often engineered their own transfer to rural areas, in such circumstances. Therefore choice of rural practice was, for some, a search for peace of mind and justice, enabling them to escape from problems encountered in urban areas:

“I had been re-posted to [hospital] but I went back underground to [MOH] and I begged that officer that: “Please don’t indicate in any way that I am the one who requested for that transfer. Just write that: “On reflection, instead of posting you to [Hospital], we are posting you to [district]!”...It was my choice!” (NA18, Registered Nurse, Hospital G)

And:

“I lost a number of relatives..... I felt I should transfer services and go nearer to my home because I did not have [many commitments there] but

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19 In the laws of Uganda, bonding agreements are not legally enforceable as commercial transactions because the providers of the funds are not registered money lenders. The sponsor cannot claim for a refund in case of default. The bonding agreement is, therefore, a “gentleman’s agreement” and a defaulter can only be sued for “breach of trust” but not “default on payment”.

160
Themes from the section and relation to job embeddedness and retention

This section has shown that the choice to serve in rural areas was an individual choice that, for some health workers, was based on conditions that exerted some degree of pressure on them. Thus, it was conditional and out of pragmatism or strategic self-positioning. Some of the conditions that took people to rural areas included government requirements (incentivised with promises), government policies like decentralisation and return of service requirements from government or other sponsors. However, other reasons were from the strategic choices of the participants, e.g. desire for job security and social security in government jobs, etc. It would seem, therefore, that although they are in the rural area, some of those health workers were on standby, biding time, ready to go as soon as they got onto the government payroll. This is a major issue in Uganda and other developing countries where staff recruited in one place move to another. The government assumes that they are delivering services where they were recruited and yet, they are not there. This is also the case for health workers who get onto the payroll and move for further studies. Some unscrupulous individuals have taken advantage of this and created “ghost workers”, a phenomenon in which people exist in name on the government payroll and draw their salaries every month but, in reality, have either never existed or hold different appointments other than those for which they are paid [713-714]. As a result, the Uganda government has been forced to conduct headcounts of civil servants periodically [21].

This section has also shown that although health workers were, in some cases, attracted to the rural areas by promises, not all such promises were fulfilled. Thus, the continued stay of the health workers after the promises were broken was always a matter of personal choice. In this section, I identified that the main themes influencing the participants’ rural choice were pragmatism and strategy, with several sub-themes, as shown in the thematic map in Fig. 6.2.
Several participants went to work in the rural areas because they wanted to be able to earn income from a government job. Most of them preferred government jobs which have better job security and also guarantee social security as pension after retirement than those in the private sector. Since the only available health care jobs in government were in the rural areas, they decided to go to the rural areas. This was a pragmatic choice. Other pragmatic choices included the decision to go to the rural area by those who had problems at home or at the workplace in urban areas. The rural area represented an escape route for them, a safe haven. Pragmatic choices also included the choices of those who went to the rural areas in response to pro-rural policies requiring rural service either with a promise of sponsorship for further studies or in return of service for sponsorship already received, or with allowances for hard-to-reach areas attached. Strategic choices included the decision of some participants to go to rural areas with a view to lie in waiting, biding time, until they secured a place on the payroll, after which they would go for further studies, knowing that they would not be deleted. They would maintain their salary during the study period. Other strategic choices included those by health
workers who wanted to be in places where they could exercise their professionalism by working with senior colleagues offering mentorship, exercising a wider scope of practice, learning new skills and being able to offer professional care and love to their patients.

When looked at from the perspective of job embeddedness, most of the reasons that took the participants to the rural areas cited in this section are related to on-the-job sacrifice. The reasons under the sub-themes “only jobs available” and “planning for further studies” show that the participants would have had a high sacrifice to make once they were on the job, because they badly needed the financial support. Therefore, these would have led to retention. The reasons under the sub-theme “hoping to transfer” show that that the participants had very low sacrifice to make in the specific rural areas where they worked. They would have accepted transfer at any time as long as it met their plans. The reasons under the sub-theme of “domestic problems” related to the participants’ off-the-job links, fit and sacrifice. They would lead to retention because the participants had private interests in them since they saw the rural area as their safe haven. The reasons under the sub-theme of “return of service” were related to on-the-job fit because the participants wanted to maintain their commitment to their organisation. The rest of the reasons related to the participants’ on-the-job sacrifice. The participants would not leave their jobs because it would entail a big sacrifice for them.

Together, the two preceding sections have discussed choices focused on fulfilling the individual health worker’s personal interests. However, the study found that some participants went to the rural areas primarily to position themselves in order to address the needs of others. The intended beneficiaries were members of their nuclear family such as the spouse or children, members of the extended family such as the parents and members of the community etc. While, for lack of more appropriate terms, I called the first type of choices “Personal Goal Choices”, the second type of choices can be regarded as “Altruistic Choices” because they are focused on the interests of other people, at times to the detriment of the personal interests of the individual health workers involved.
Some participants made choices to go to rural areas in order to meet the needs of members of their immediate or extended family, patients, or simply described the beneficiaries as “my people”. In a few cases, the choice to go to a rural area was made to assist an organisation or institution facing crisis, e.g. a hospital, and not individuals. Several participants mentioned that if it were not for an interest to serve those beneficiaries, they would be in different locations. The participants were compelled by circumstances but, primarily, to benefit the interests of others. One notable observation in this study is that altruistic choices were more commonly reported by nurses than by doctors. Support for family members who lived in those rural areas ranged from helping sick family members, being available for elderly relatives, solving family wrangles, being available for their young children, protecting the interests of their broader family or community, offering a presence as figurehead or actually fulfilling the responsibility of head of household, joining a spouse already working in the rural area etc. Many of them would have pursued options in urban areas or abroad but altruistic concerns overrode their interests and they stayed not only within the country but also in the rural areas close to the people who needed help.

Social responsibilities (such as headship of a household) took precedence over personal interests and influenced the choice of practice location. Social responsibilities are an important concern in many settings. However, in countries without social health insurance or national social care systems, like Uganda, when problems occur, like death of both parents of young children or having elderly parents, the responsibilities to care for the orphans or the elderly are passed on to the nearest of kin. Commonly, this means that the person in charge should stay near the protégés in order to help them. Some participants went to rural areas simply to fulfil their social obligation as imposed by cultural norms. For most of these participants, even when the initial problem no longer existed, they had become so integrated that they did not bother to go to look for work elsewhere thereafter:

“... there was a...problem in my own family ...– they kept writing to me that I should come back because there was a wrangle over land
..... I had to come back and rescue the land. .... I stayed to make my people have peace. ... Up to today, there is no problem in the family. ... I am the first-born of my mother. So they looked at me as the head”. [NA1, Registered Nurse, Hospital I]

And:

“... I lost my parents. I lost my father ... so I was left with many children to look after, so I decided to come home. ...It was a very tough decision to make really! But during our days, life was not very bad as it is during these days. We have had to endure! Especially finance, ayahayah! ....It is terrible!” (MA9, Medical Officer, B)

While many participants wanted to attend to their domestic issues focused on their families, a few others opted to go to rural areas to cater for patients who they saw to be badly in need of attention, and eventually, they stayed in the rural areas for this reason. Their choices were also altruistic because they were made to cater for other people, who were not even relatives, but simply people in need. Under such circumstances, the participants did not even consider the rurality of the location because their attention was anchored to the plight of the patients. Therefore, concern for others overrode all other considerations:

“I liked them... Now, I would just imagine, if I were the one, if this was my relative, you are rejected by the relatives, by the community and now by the nurse, ... the health worker! (NA9, Registered Nurse, Hospital C)

Themes from the section and relation to job embeddedness and retention

The main underlying theme of the reasons for choosing to go to the rural areas in order to meet the needs of others was altruism. There were a few focus areas or sub-themes under this theme as illustrated in the thematic map in Fig. 6.3. The participants wanted to assist their immediate and extended families and to bring about peace in several ways, as well as serving needy patients or organisations.
Fig. 6.3 Thematic map for altruistic decisions to go to work in a rural area

Altruism and pro-social behaviour are increasingly becoming understood as drivers of health workers’ choices of practice location and motivation to work [468, 572-575, 715-716]. In this study, they are also manifested by health workers who opted to go to work in the rural areas in order to serve the needs of family members, needy patients and organisations in crisis. Although not widely-studied in the context of choice of rural practice, altruism could be a major factor explaining the choices of many other health workers whose reason for wanting to go to the rural area was, ostensibly, to be “near home”.

When looked at from the perspective of job embeddedness, the findings in this section show that most of the altruistic personal reasons that made the participants choose to go to the rural areas were related to their off-the-job links and off-the-job sacrifice. This is because most of them were related to their personal interests and others linked to their families or other intrinsic interests. All the sub-themes that fall under “family peace” in Fig. 6.3 are related to off-the-job links and sacrifice, because they relate to relatives and other people for whom the participants cared. It would also be hard for them to sacrifice their concern for those people and leave the rural area. Only the sub-themes under “needy patients” and “needy organisations” are related to the participants’ on-the-job links and sacrifice. All these would have strengthened their attachment to the rural jobs and built links which would be hard to break. Thus, they would have led to increased retention, because they are related to the participants’ intrinsic attachment.
This section has presented the influences on the decision to work in rural areas in circumstances where the health workers had a chance to choose, albeit under pressure at times, and had options to choose from e.g. between urban and rural areas and even abroad, but chose to work in rural areas. The choices were made either in personal interest or in the interest of others (altruistic). The personal interest choices were either taken freely or taken under circumstantial pressure but over which the participant had some control. Some participants freely chose to work in rural areas to meet their personal needs, ranging from basic needs through social and safety needs to more complex needs like esteem and self-actualisation. Others were constrained in their choice to work in rural areas and simply went out of pragmatism, because rural jobs were the only options available at that time, or because they strategically positioned themselves in rural areas to benefit from other proposed policies such as priority sponsorship for rural health workers, or to receive hard-to-reach allowances.

Some choices to work in rural areas were altruistic, made out of considerations for the needs of others such as needy patients or family members. In all these choices, the participant had a degree of control, but opted to work in rural areas. When looked at from the perspective of job embeddedness, the findings of this section show that most of the altruistic reasons for going to work in the rural areas were related to the participants’ on-the-job and off-the-job links and sacrifice. The next section discusses decisions to work in rural areas under a different kind of pressure, originating from sources over which the participant had no control, such as sponsors, government directives, or feeling bound by organisational culture and professional ethics. The participant could have chosen to obey or disobey these forces, with different consequences, but chose to obey.

6.4 Rural practice out of obedience

Many participants did not choose their rural location. The only choice they made was to accept what they were told to do. Some were posted by an authority either at national or local level, such as the government, a congregation or their training school. Most participants who had served for more than 10 years went to rural areas simply because that is where they were posted. They did not question the
decision because they had grown to understand that everyone goes wherever he/she is posted. This thinking, of quietly accepting posting orders (also popularly called “marching orders” in traditional public service terminology), had become part of the organisational culture in government departments and in non-government training schools. According to the participants, upon completion of studies, graduates just waited to see the list indicating where they had been posted and simply reported for duty with a copy of the list or, occasionally, their “marching orders”. In many cases, the appointment letter came much later.

Even for transfers of staff, the transferred officer was expected to comply and go to the next station as soon as the transfer order came. They were not expected to have second thoughts about the orders. Some participants belonged to religious congregations and had vows of obedience, which include going wherever you are posted. Thus, their acceptance to go to rural areas was simply an illustration of their commitment to the vows they professed with the sending organisation and did not have much to do with the job or location. This is how most participants deployed before decentralisation ended up in rural areas. This type of obedience was seen in all cadres, but especially among nurses, and most especially those trained in private not-for-profit training schools. Some of them even thought that automatic acceptance of posting orders was part of their professional ethics, which they were expected to exhibit as newly qualified staff, especially if deployed by their tutors:

“So ... they used to post us in those PNFP hospitals....I think it was the policy of the private [schools]. It used to be their policy that they post you where they want! ....So when I wrote to the tutor who was there, she posted me here ....” (NA14, Registered Nurse, Hospital L).

Another organisational culture that had an effect on choice of rural practice was the release of graduates’ academic certificates to the training schools instead of the graduates. In PNFP training schools, the school authorities did not release the academic certificates to the graduate until he/she had served a two-year “probation period” in a place where the school authorities posted him/her. In
addition, the Uganda Nurses and Midwives Council (UNMC) did not release the registration certificates to the graduate until after confirmation from the school that the graduate had served the probation period. Nobody at any level questioned these practices and they continued for many years. Everybody complied and went along with them even when they were not the official written policy. Some participants, however, reported that that these organisational cultures had changed with time, after a number of policy changes. Currently, the Ministry of Education and Sports (MOES), which is responsible for training of all pre-service health workers, does not issue certificates to the schools but to the individual graduates. In addition, the PNFP schools no longer post their graduates and there is no need to wait for two years before they get their certificates. These changes have had a significant effect and reduced the qualified health workers available in rural PNFP hospitals. The fact that most participants thought that accepting postings without question was part of their professional ethics, reveals why they were willing to accept even rural postings. This further emphasises the importance of professionalism in increasing access to health workers:

“... they used to post us. ...The Matron .... told me: “..., we are posting you to [hospital]”. ... I couldn’t object a transfer....I would have gone anywhere provided I was posted...Because, in nursing, you are not supposed to resist, according to our profession.... Even, we were not given our certificates after qualifying. They could keep them for two years” (NA7, Registered Nurse, Hospital C)

Some participants agreed to go to certain rural areas reluctantly, because they had their own preferred choices among the rural areas. Although they did not mind going to work in rural areas, they insisted on being posted to their preferred locations. They resisted their initial postings until they were posted to agreeable locations. Therefore, they were both obedient and defiant in that they modified the posting orders either unilaterally or by forcing the posting authorities to revise the posting. From the participants’ accounts, one main problem that led to reluctance was weak systems. The posting authorities did not have formal criteria for deciding on which staff to post to specific areas and, hence, often arbitrarily dictated who
would go anywhere, or used crude methods like guessing the ethnicity of the graduate. They did not take the concerns of the posted staff into consideration, thus appearing insensitive. Even when the posted officer could not cope with the posting, the authorities were not ready to listen to their pleas. This left the participants no choice but to reject the appointments altogether or to go somewhere else of their choice and seek for revision of their posting with a retrospective appointment later. This illustrates the desire by some health workers to be in charge of the choices of where they work, while still leaving some room for the authorities to do their duty, hence “reluctant obedience”. Although reluctant obedience was not reported by many participants, it probably exists on a larger scale:

“... I went to [district] and I failed to [stay there]...because of the ....environment.... And, actually, my posting here, me I took it as a punishment because I defaulted from [the previous posting]....They said: “No. You go. We shall post you to [current hospital]”. Everybody who was posted here, 50% of the staff would refuse. But me I said: “No. Let me go ... and I work”. (MA7, Medical Officer, Hospital J).

Therefore, on close scrutiny of the decisions to accept the postings, I identified two types of decisions. The first type is where the participant just accepted wherever he/she was posted without questioning, as a result of tradition and organisational culture or by obeying institutional orders. The participant did not object to the posting on the basis of location. I considered this type of choice to be “Compliant obedience” or, simply, “Compliance”. In the second type, the participant grudgingly and questioningly accepted the posting because of personal reasons. He/she did not like the posting but simply accepted to buy some administrative peace for himself/herself at least for some time. In the short run, however, the participant modified the posting by either illegally going to somewhere else of their choice or by going back to the posting authority and requesting to be posted to another location. In all such cases, the participant remained obedient, accepting to be posted, but also defiant, rejecting the original choice of the posting authority in
preference for his/her own choice, even if this meant another rural location, but as long as it was their choice. I considered this to be “Reluctant obedience”.

Themes from this section and relation to job embeddedness and retention

One can summarise the themes in this section with a thematic map as shown in Fig. 6.4. Some participants went to work in rural areas because they complied with a directive from an authority (government, congregation etc). Some complied fully with the posting order because an organisational culture of compliance with posting orders had been established for many years and the participants simply fell in line with the established practice. Some others complied allegedly due to the sense of professionalism they had acquired through training while others complied due to commitment to their sending organisations. However, others complied reluctantly because they insisted on going to their preferred areas. Such participants often had personal reasons that prevented them from working in specific places but they could work in other rural areas. However, the posting authorities were not willing to listen to their pleas for changing the posting, leading to defaulting on postings. They always managed to get their wish by being re-posted to areas of their choice. Thus, I saw this set of choices as falling under a common general theme of “obedience”, within which I saw both unquestioning obedience (“compliance”) and questioning obedience (“reluctance”).

![Thematic map of factors leading to rural practice by obedience to authorities](image)

Fig. 6.4 Thematic map of factors leading to rural practice by obedience to authorities
From a perspective of job embeddedness, one can observe that the reasons that took the participants to the rural areas cited in this section were mostly job-related (i.e. on-the-job domain). Those under the sub-theme “compliance” were related to on-the-job fit, while those under “reluctant obedience” were under on-the-job fit and on-the-job links. Therefore, such participants would have been retained mainly due to job-related reasons.

6.5 Conclusion

This chapter has presented the influences on decisions to practice in rural areas. The findings show the complexity of the decision-making process and I attempted to show some aspects of this complexity. Qualified health workers have a multiplicity of reasons for going to rural areas, and no health worker went for just one reason. However, broadly speaking, there were two explanations for going to rural areas i.e. choice and obedience. “Choice” depicts a number of decisions that show that the health worker was in control of the decision process. S/he wanted, opted for, solicited or willingly accepted a rural appointment. Thus, there was a degree of freedom underlying the choice. “Obedience” depicts those decisions in which the health worker was not in full control of his/her decision to go to the rural area. S/he did not want, intend to or solicit a rural appointment to go to a rural area but accepted it out of obedience to an authority to which s/he was beholden and could not deny such a request or order. Therefore, there is a degree of obligation underlying this type of obedience.

Among the reasons for choosing to work in rural areas, two broad categories of influences on rural choice were identified, namely, that some were focused on attainment of private goals while others were altruistic and focused on the needs of others. Of the choices focused on private goals, some were purely free choices made out a participant’s desire to work in the rural area, while others were constrained, in that the participants had no option but to take them since their options in other locations were limited or since they had to attend to social and other commitments in rural areas. In other words, their choice of rural practice was in pursuit of a perceived benefit for self or significant others. By obedience, the participants agreed to work in rural areas upon request or directive from an
authority, although in some cases, they went reluctantly and at times challenged the posting orders. Ultimately, one can say that the two overarching themes in the reasons that took the participants to rural areas were “**Perceived benefit**” and “**Obligation**”, as shown in Fig. 6.5.

Whereas I had initially thought that health workers were only “attracted” to the rural areas, this chapter has revealed that the reasons go beyond attraction. Attraction suggests a willing move to the rural areas. However, analysis of the findings shows that not all the reasons for going to the rural area can properly fit under “attraction”. Although most of the choices were due to either perceived benefit for self or others, many other health workers went to rural areas out of obligation. The participants went to the rural areas to meet their needs. Different health workers had different needs. Some needed to be assured of basic needs like shelter and food, others went to meet social needs for friendship and love because their loved ones were in the rural areas. Others went to the rural areas to attain positions of responsibility or to ensure that they were eligible for sponsorship in order to advance their careers.

**Fig. 6.5 Thematic map of influences on choice of rural practice**

Many health workers went to the rural areas out of pragmatism because the only available jobs were in the rural areas. However, some few others went to the rural areas out of altruism, because they wanted to help needy people whom they knew
to be in the rural area. A few other health workers went to the rural areas out of obedience to authority, whether of the government, the congregation or a bishop. Finally, when looked at from the perspective of job embeddedness, most of the reasons for taking the health workers to the rural areas seem to have been job-related, especially to do with on-the-job sacrifice. However, reasons related to off-the job links were also strong. The next chapter discusses the process of job embeddedness through which the participants became integrated in the rural areas.
7 FINDINGS II: EMBEDDEDNESS AND INTEGRATION IN RURAL JOBS

7.1 Introduction
This chapter describes the process of embeddedness of the health workers under study into rural jobs, through the various stages from entry through integration until full job embeddedness. Entry and integration are captured with qualitative findings while the extent of job embeddedness is captured with quantitative findings. I present the qualitative findings, relating to preparation, entry and integration, in the first part of the chapter, followed by quantitative findings on the measurement of the degree of job embeddedness and the factors that affect job embeddedness in the second part.

7.2 Qualitative findings on rural job embeddedness
In the analysis of the data, I identified five steps in the process of embeddedness, namely: preparation; moving to the rural area; reception; integration; and resilience and adaptation to shocks.

7.2.1 Effect of preparation on embeddedness and retention in rural life and practice
The participants underwent varying phases of preparation for rural life and practice. The initial preparations that eventually made them fit in rural areas were generic and not linked to medical or nursing practice. They could be traced to the early parts of their upbringing and unlinked to career choice. Their link to eventual rural job embeddedness was so remote and blurred that even the retained staff could not immediately link the two. For most participants, preparations began as normal preparations for success in life, with ordinary life skills, which eventually became very handy when the health worker went to a rural area. This type of “Social preparation” mostly prepared the participants for off-the-job embeddedness, although some of the skills were also applicable on the job.

For most participants, social preparations that benefited eventual rural job embeddedness started in childhood. They included learning mundane activities like ability to dig, grow their own food, cook using local materials, and willingness to live in less-than-ideal circumstances. It also included essential language and
communication skills, ability to identify local sensitivities and how to behave appropriately when confronted with them. It also included the development of social skills of interacting with people from different socio-economic status. The skills may be divided into “hard skills” for physical survival (cooking, digging etc) and “soft skills” for emotional intelligence and social living:

“The experience of growing in a rural area... trains a child about how to live in a hard life. ... we could get up very early in the morning. ...go to the garden before going to school. That meant that around 4:00 [a.m.] or 5:00 [a.m.] you are going to the garden! ... You have to dig ... wash plates ... to get water, we had to travel 2 km..” (NA22, Registered Nurse, Hospital F).

And:

“Me, I can survive in any condition! ...As long as there is water and transport, the food, you are supposed to buy! Even if there is no electricity, I can use kerosene! And you may have gas. You buy gas and charcoal and you use! ....I think, maybe, from the way I was brought up! Because we were brought up to survive in any area!” (NA23, Registered Nurse, Hospital F)

Ability to grow one’s own food and to negotiate prices successfully was essential because, contrary to popular perception, the participants reported the cost of living in rural areas to be higher than what they expected. Moreover, local business people perceive health workers to have a lot of money and tend to overcharge whenever health workers go to buy items from the shops. This calls for ability to negotiate prices, often in the local language. Many health workers reported having developed essential communication skills for that purpose. Apart from helping in being streetwise, communication skills were also useful in dealing with patients of low socio-economic status. Part of the survival social skills training included learning to be familiar with local geography and being sensitive to socio-economic differences between themselves and their clients. Demonstration of

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20 In Uganda, all commodity prices outside supermarkets are negotiable.
knowledge of the local geography impressed the community members and increased the openness of the community to new health workers, while ability to relate at all levels enhanced their accessibility and acceptability to the population. Eventually these hastened and deepened their integration:

“…my humble background, gives me a better appreciation of the behaviours, norms and appreciating the sort of pains people can go through in terms of... We used to deal with real, real poverty. For example, I know the language... even the way you take the history, can be in such a comfortable way such that you can get the information while not embarrassing the patient! You can use the language they understand...Metaphors and so on!” (MA12, Medical Officer, Hospital L)

And:

“You know when you go into a community, you have to associate with those people. Maybe you have reached a family and they don’t even have a mat where to sit, you just say: “Bring a kaveera” [plastic sheeting] and you sit and associate with them. You don’t expect a good seat”. (NB1, Registered Nurse, Hospital E)

Several participants also reported that ability to identify and avoid sensitive local conflicts was an essential skill that enabled them to integrate in rural areas. The problems frequently encountered were ethnic differences between local tribes or political differences among local opinion leaders. The health worker was expected by both the local community and the government to be neutral in such conflicts. However, at times, health workers were also affected directly, e.g. through causing insecurity or marginalisation, especially if they belonged to one of the local tribes:

“That is one thing I was cautioned [about] and I also proved. I have totally avoided indulging in their local politics. And I think to some extent, that is how I have managed to survive. .... I avoid offending
certain parties. I have to be very rational and know whom I am talking to” (MA10, Medical Officer, Hospital C)

And:

“I have regretted [coming here] because they step on our heads, they don’t cooperate! They take the same people for seminars, ...Most people in the offices are [tribe], so they consider their relatives...Studies? I wish I could go back, but money! ......I have told you, we are in that category of tribe ... If they can't even give you study leave!.....It brings me stress! (laughs) I am stressed!” (NB8, Registered Nurse, Hospital D)

In some cases, participants underwent “Technical preparation” during their professional training, geared to increasing their chances of successful practice in a resource-poor country. “Technical preparation” mainly included living at a health facility located in a rural area, working with rural health workers, using limited resources in a rural health facility, handling more complex cases than would normally be permitted for students in the teaching hospital, and interacting with community members like the qualified health workers do. Technical preparation mostly prepared the participants to fit and practice successfully in rural health facilities, thus increasing their on-the-job embeddedness. All the 50 participants reported to have undergone social preparations, but only 21 participants reported to have undergone technical preparation for rural areas, as shown in Table 7.1.

Table 7.1 History of exposure to technical preparation for rural practice

<table>
<thead>
<tr>
<th>Rural exposure during training</th>
<th>Doctors</th>
<th></th>
<th>Registered Nurses</th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 – 10 years</td>
<td>&gt;10 years</td>
<td>3 – 10 years</td>
<td>&gt;10 years</td>
<td></td>
</tr>
<tr>
<td>Exposed</td>
<td>5</td>
<td>8</td>
<td>1</td>
<td>7</td>
<td>21</td>
</tr>
<tr>
<td>Not exposed</td>
<td>0</td>
<td>4</td>
<td>9</td>
<td>16</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>12</td>
<td>10</td>
<td>23</td>
<td>50</td>
</tr>
</tbody>
</table>

Most of the participants reported that they were not overtly informed that the training they received was in preparation for a possible rural career. They had understood their rural training to be merely part of their normal training
requirements necessary to complete the course partly because the programmes were named “Community Health” or “Preventive Medicine”. Most participants reported that they were simply trained to work in any location. Thus, many of them were amused to have to acknowledge during the interviews that the training they got, actually, facilitated their working in the rural areas. It is not clear whether informing them of the purpose at the training stage would have affected their interest and skill-acquisition.

The rural-oriented programmes varied in content, structure and duration from one training institution to another, and by course. Some of them had fully-fledged rural clerkships while in others, students organised their own rural exposure and others simply took students to deliver services in the rural area, with no formal learning process. From the interviews, I identified seven models of rural exposure, falling into two broad categories: formal and informal (see Table 7.2). The formal programmes were organised by the training institution and officially facilitated while the informal programmes were organised by individual students and not facilitated. Informal programmes were only accessible by a few interested individuals able to get funding. Some of the programmes were still active by the time of the study while others had been phased out over the years, especially those attended by the older participants.

Ironically, for doctors, whereas all the models gave the students some exposure to rural areas, it is only models 3 and 7 (the holiday programmes with minimal supervision by training school authorities) which were most appreciated for giving the practical clinical skills necessary for independent practice in a rural area, and thus the confidence to go there after training. From the participants’ explanations, it would seem that only those two models covered the full scope of the work of a rural doctor, including surgery. The students learnt practical skills from rural doctors who were always eager to train the students quickly in order to get relief. As soon as the students acquired skills to do basic procedures, the doctors would return to their private clinics and leave the students to practice on their own.
Table 7.2 Models of rural exposure undergone by the participants

<table>
<thead>
<tr>
<th>Formality</th>
<th>Model No.</th>
<th>Cadre</th>
<th>Course duration</th>
<th>Timing of rural clerkship</th>
<th>Duration of rural clerkship</th>
<th>Organised by</th>
<th>Attended by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal</td>
<td>1</td>
<td>Medical Officers</td>
<td>5 years</td>
<td>Y1 &amp; Y4</td>
<td>4 - 6 weeks at a time *2 = 8 - 12 weeks</td>
<td>Training institution</td>
<td>MB1, 4-5</td>
</tr>
<tr>
<td>Formal</td>
<td>2</td>
<td>Medical Officers</td>
<td>5 years</td>
<td>Y1 – Y5</td>
<td>3 - 4 weeks per year = 15 – 20 weeks</td>
<td>Training institution</td>
<td>MB2</td>
</tr>
<tr>
<td>Formal</td>
<td>3</td>
<td>Medical Officers</td>
<td>5 years</td>
<td>Any holiday from Y3 to Y5</td>
<td>~3 weeks at a time</td>
<td>Students</td>
<td>MA6-7</td>
</tr>
<tr>
<td>Formal</td>
<td>4</td>
<td>Medical Officers</td>
<td>5 years</td>
<td>Y4</td>
<td>1 -2 weeks</td>
<td>Training institution</td>
<td>MA2-4, 6-9, 11-12, MB3</td>
</tr>
<tr>
<td>Formal</td>
<td>5</td>
<td>Registered Nurses</td>
<td>2½ years</td>
<td>Y1 – Y2</td>
<td>1 day per week * ~ 6 months (Domiciliary)</td>
<td>Training institution</td>
<td>NA2-4, 20</td>
</tr>
<tr>
<td>Formal</td>
<td>6</td>
<td>Registered Nurses</td>
<td>2½ years</td>
<td>Y1</td>
<td>1 day per week * 4 weeks = 4 days</td>
<td>Training institution</td>
<td>NA1, 5-19, 21-23, NB1-10</td>
</tr>
<tr>
<td>Informal</td>
<td>7</td>
<td>Medical Officers</td>
<td>5 years</td>
<td>Any holiday from Y3 to Y5</td>
<td>~3 weeks at a time</td>
<td>Students</td>
<td>MB3-4, MA6-7</td>
</tr>
</tbody>
</table>

The students were left in charge of the wards to muddle through the care process. Though a risky practice, it built students’ interest in rural practice and led to many of them choosing rural practice. The hands-on approach gave the students the much-needed skills they were looking for, which increased their self-confidence, clinical independence and readiness for rural practice. Broadly speaking, one can say that this increased their self-efficacy as clinicians and eventually facilitated their quick adaptation to rural jobs and job satisfaction, leading to retention:

“They are with you for one week or two. When they see you are able to do something, people disappear!” (MB4, Medical Officer, Hospital E)

And:
“...I used to enjoy it because there was a lot of exposure and then we were actually led [made] to do much more than we should have done. In fact, by the time I went for internship, I had done most of these simple ...operations”. (MA6, Medical Officer, Hospital D)

Themes from the section and relation to job embeddedness and retention

This section has presented the findings on the preparation of health workers for rural practice and retention. They can be summarised as shown in Fig. 7.1 Thematic map of influences on preparation for rural embeddedness and retention

![Thematic map of influences on preparation for rural embeddedness and retention](image)

The key themes that are observable in the section are adaptability and self-efficacy. They explain the preparations that the participants underwent. All participants underwent social preparation geared to make them adaptable to different life circumstances, such as living in less-than-ideal circumstances, among foreign peoples (cultural competence), living among conflicting peoples without getting involved (emotional intelligence) and how to communicate with people of different socio-economic status (emotional intelligence). These increased their ability to adapt to new circumstances such as those some participants found themselves in, within the rural areas. They also underwent technical preparations that gave them
clinical skills and confidence in decision-making. This increased their self-efficacy as health workers and they could face the challenges of rural practice confidently.

From a perspective of job embeddedness, the sub-themes under social preparation mainly applied to off-the-job situations, especially off-the-job links and off-the-job fit. However, the same skills were also applicable on the job, to increase on-the-job links and on-the-job fit. The sub-themes under technical preparation were mainly applicable in job-related situations, to increase on-the-job links, on-the-job fit and even on-the-job sacrifice. Once the health worker had acquired these skills, he/she felt essential to the population and would not find it easy to break his/her bonds with the community.

7.2.2 Effect of deployment method and reception on embeddedness and retention

After training, the participants entered rural areas through various approaches. Five approaches could be identified, namely, posting, application, volunteering, headhunting. Many of the longer-serving staff reported to have been posted by a central level, such as the Ministry of Health, congregation or diocese. The Ministry of Health used to post government employees but it stopped after enactment of the Local Governments Act (1997) [712] which decentralised some government functions to the district. Before 1997, all government health training institutions submitted their lists of freshly qualifying health workers to the Personnel Department of the Ministry of Health, which proceeded to distribute the graduates throughout the country. There was no need for application or interviews. All fresh graduates from all nursing, medical and paramedical colleges would be absorbed because the demand exceeded the production and the budget permitted recruitment because the health facilities were fewer.

However, although the primary criterion for deployment was need, it was supplemented by other considerations such as ethnic background, according to the participants. Participants were initially deployed to areas where they were presumed to originate from, in order to increase compliance. However, since there were no written and standard criteria for determining a candidate’s ethnicity, the deploying officers used crude methods like surnames to deploy people to their
presumed places of origin\textsuperscript{21}. This was subject to a lot of errors and resulted in the staff either not going at all or not staying long:

“I went to [hospital] first .... I worked there for 2 years. .....The government was just posting us according to our names! When you are “[surname]”, they think you are from [region], so, you should go and serve your people that way! ... So, I decided to take off! I ran away from there and left my property there!” (NA11, Registered Nurse, Hospital E)

In faith-based health services, the participants were deployed to a specific hospital by either the diocesan bishop or the congregation to which the participant belonged. The details of the mode of deployment are shown in Table 7.2. After 1997, intending government employees had to apply in writing to the districts only after advertisement of jobs. Given the limited resources, government started to recruit only when resources were available, often freezing recruitment for two to five years. Due to the long inter-recruitment intervals, there is often the surprising situation of a shortage of qualified health workers in the facilities, due to a high turnover, especially in rural facilities, and an excess of redundant qualified health workers.

<table>
<thead>
<tr>
<th>Cadre</th>
<th>Mode of entry</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Posting</td>
<td>Application</td>
</tr>
<tr>
<td>Doctors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-10 yrs</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>&gt;10 yrs</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Sub-total</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Nurses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-10 yrs</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>&gt;10 yrs</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>Sub-total</td>
<td>9</td>
<td>19</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-10 yrs</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>&gt;10 yrs</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Grand total</td>
<td>15</td>
<td>20</td>
</tr>
</tbody>
</table>

\textsuperscript{21} In Uganda, surnames are generally ethnic, but vary between the five main ethnic groups. Ethnic groups generally live in known regions. However, some surnames are inter-ethnic while others are borrowed from outside Uganda. Thus, they are a blunt tool for determination of ethnicity and origin.
There is stiff competition for the urban and rich districts while poor and remote ones fail to attract candidates. To circumvent the recruitment freeze, some local managers and districts have started to employ health workers as volunteers, who work until the freeze is lifted, and then get priority in the selection. This is a relatively new phenomenon in the country, used for surreptitious recruitment. The volunteers receive no salary but may be given accommodation and other material support, until they are formally recruited. They are allocated full duties like any other official staff and all cadres may be recruited through this channel. Moreover, the volunteers work for long before they are officially recruited. In one case, one doctor had volunteered for nine months while another had volunteered for four. Nurses reported even longer durations of volunteering:

“I came and worked as a volunteer for a full year. After that.....they re-advertised. I applied. We went through. They short-listed us. We went and did the interview. We were given appointment letters and we began working”. (NB1, Registered Nurse, Hospital E)

And:

“Actually, I came......during that time they had not even advertised! I came to work as a volunteer! I got attached to a friend who was a friend of my husband and we came together. .....I first worked for around one year.... Then I did the interviews” (NB6, Registered Nurse, Hospital C).

Eight participants, all of them doctors, in both government and private hospitals had been recruited through headhunting. Three of them were recruited for government hospitals and the rest for the faith-based hospitals. Headhunting for government hospitals was done by district level political leaders, especially District Chairpersons and prominent community members while for faith-based facilities, it was done by the bishop, the Diocesan Health Coordinator, members of the hospital Management Team or a partner NGO:
“So, some politicians ... came for me because I had treated a number of ... their relatives while an intern ... I went and made a pre-visit. It was a big hospital, a good hospital and I thought I would practice my clinical skills in such a setting! ....The LC V Chairperson\textsuperscript{22},.....Yeah, himself!”

(MB2, Medical Officer, Hospital E)

Since the study looked at lifetime employment courses rather than just the participants’ current job, I found that some participants had been recruited with several methods at different times in their career. Indeed, one participant who had served in four hospitals in nine years was recruited by headhunting in three private hospitals and posted centrally by the Ministry of Health to a government hospital. Another participant had been posted centrally to a government health centre, later headhunted by two private not-for-profit hospitals and a community member to a government hospital, and eventually posted centrally to yet another hospital.

Several participants claimed that the manner in which they were received influenced their perceptions about the rural places where they were to work. The arrival of some participants was facilitated by the employers, while that of others was not. Those who were facilitated felt very respected and well-received, and they integrated faster than their counterparts who were not facilitated. Participants reported that, in the past (until about 1990), the government used to facilitate all staff by providing a vehicle to transport them upon deployment or transfer. The district council or the Ministry of Health would provide a government lorry to transport the staff and his/her family and property from an agreed point to the new station. In addition, they were entitled to an amount of money to facilitate settlement in a new place. This “Disturbance Allowance” was paid to both new staff and transferred staff of all cadres\textsuperscript{23}. However, participants reported that, after

\textsuperscript{22} The Local Council V (LC V) chairperson is the elected political head of a district (with about 500,000 people). In Uganda’s administrative system, the country is divided, in ascending order, into villages, parishes, sub-counties, counties, districts and the national level. Each level, apart from the national level) is managed by an elected council of local residents, called a Local Council (LC). The district level is the fifth from the bottom, hence LC V.

\textsuperscript{23} The Uganda Public Service Standing Orders specifies that a “Disturbance Allowance” is only payable to officers on transfer, while new appointees are paid “Settling-in Allowance”. Disturbance Allowance is equivalent to one month’s basic salary while Settling-in Allowance is equivalent to 50% of one month’s salary. 717. The Republic of Uganda, The Uganda Public Service Standing
about 1990, this allowance was no longer forthcoming and they started reporting for duty at their own cost, even though the provision for it still exists on the legal documents and the funds are probably released to somebody else other than the rightful person. They considered this to be poor reception but they took up the posts, nevertheless, because they were in need of employment.

Nine participants in non-government hospitals reported that they had been facilitated to reach their work stations by the employer. Facilitation comprised of transportation for self, family and property. The participants greatly valued the offer of transport as a sign of respect for them, especially in view of the risks involved, in some cases. This increased the strength of the bonding and the psychological contract between the employer and the participant. Eight of the nine facilitated participants eventually worked in the hospitals for more than 20 years. The staff appreciated the simple gesture of facilitating them to reach the work station and attached a lot of value to it:

“The welcome! They picked me from school! That time, they were the whites. She was a nun called [name], because she is the one who was sent to school, who picked me from school”. (NA6, Registered Nurse, Hospital C)

And:

“In fact, [hospital] sent me a lorry. And it was during that bad time ..., they risked the lorry to go from [district] to beyond [town]. So they picked us from there – the whole family. And we ... reached the following day because of the bad road. So, ...why I persisted, it is because they helped me. ....I felt I was loved and somehow promoted”. (NA1, Registered Nurse, Hospital I)

Upon arrival, the participants were received in different ways and they perceived the reception differently, too. Participants in non-government hospitals seemed to be much happier with the reception they received than those in government
hospitals. In both groups, the reception consisted of a formal induction period before the participant was left to integrate on his/her own. The induction was conducted by a senior officer, often the head of department to which the new staff member belonged. It consisted of showing the new staff his/her work station and living quarters and introducing them to colleagues. In some cases, participants also received food rations for a period of time until they settled in, and in some cases they were allocated pieces of hospital land for cultivation of their own food crops. Apart from the physical assistance, the show of welcome by the hospital managers served to make the participant fit into the organisation better and quickly, and to start being productive in a short while. The level of the person who handled the reception also seems important to staff. Many participants emphasised having been received by the top managers, suggesting that the participants attached great value if they were received by top level managers:

“So, the whole environment was welcoming but very respectful and also facilitative to enable you to do your work! .... And then, there is a bit of orientation... I would say it is much to do with the sort of respect that they would give and everybody is willing to help”

(MA12, Medical Officer, Hospital L)

And:

“I must say the doctor who was on the ground was very supportive because .... He oriented me around and he introduced me to the other staff. So, I settled in very quickly!” (MB2, Medical Officer, Hospital E)

Apart from the managers, even colleagues also contributed to welcoming the new arrivals by giving safety information, advising on how to survive in that rural community, the local culture and sociology and where to obtain necessary services etc. This increased the bonding with colleagues at work and further improved the chances of embeddedness and retention:
“The staff were not bad. Though I was a volunteer, I was given a room where to stay. On top of that, I was given some items to use like foodstuffs. They gave me some things: posho [maize flour] ....It was from the store, through the Senior Nursing Officer and the Administrator”. (NB1, Registered Nurse)

And:

“The best friends I first made were the Nursing Assistants. They were friendly ... And they started telling me everything ... Whenever I wanted something, she would help me. I want to make my hair, she said go to so and so. ...She connected me to a salon. .... And I also got used” (NA17, Registered Nurse, Hospital G)

Different hospitals had organisational cultures that, also, helped the new staff to settle in. For example, some hospitals with spare land allocated it to staff to grow their own food. In most cases, the land was shared among the staff. New arrivals were also given some of that land, easing the pressures of expenses on food and making life in the rural manageable. This made it possible for staff retention:

“When I came here, I was allocated a small garden where I would plant a few things like maize. It was the culture of people here, that whoever came would be given a plot....Yeah, part of hospital land. ...I did some cultivation.....To boost on some... on food actually, food savings” (MA7, Medical Officer, Hospital J)

Some hospital managers also made special arrangements to employ participants whose qualifications fell out of the hospital’s usual staff establishment. In some cases, the arrangements went as far as giving a salary which was outside the scale of the hospital. As a result of such major efforts, the participants felt very much appreciated and developed a strong psychological bonding with the institution. In appreciation, the participants undertook to do extra duties that would not be expected of them, such as night duty calls. In one such case, a specialist who would normally be expected to do only “Specialist Call Duty”, offered to do full night duty
in order to assist the hospital as a sign of gratitude. As a result, the hospital did not have to recruit another person.

Apart from integration on the job, the participants also underwent integration activities in the community. Fitting in the community depended upon the ability to develop friends and networks in the community. This was influenced by whether the participant originated from the area or not, ability to speak the local language (since few people in the local community were able to speak English), and the new arrival’s general attitude to the local community. Those who could speak the local language integrated faster. Others made efforts to learn them. In a few cases, community members also endeavoured to speak the new arrival’s language, resulting in the health workers ignoring to learn the local language. Communities also welcomed the new arrivals by providing them with food, inviting them over for visits or making welcome parties in their honour. All these efforts served to make bonds between the new arrival and the community. This affected their perceptions of their new circumstances and, eventually, influenced the decisions by some of them to stay for long:

“Even, I got a warm welcome!...From the Management, from the Chairperson LC V those top officials, the DHO...they welcomed me!.....Yeah! It was smooth!” (NB6, Registered Nurse, Hospital D)

And:

“They made a welcome party. The whole of [name] County held a party ... to welcome me”. (MA1, Medical officer, Hospital I)

Themes from the section and relation to job embeddedness and retention

This section has presented the findings related to the deployment of the health workers to the rural areas and how they were received and integrated. The themes observable in this section can be summarised in Fig. 7.3

24 The District Health Officer (DHO), usually a doctor specializing in Public Health or Management, is the technical head of health services in the district.
The entry of the participants into the rural areas was influenced, in the main, by their deployment and reception. In terms of deployment, the participants entry depended on the mode of deployment and the level of the deploying office. In terms of reception, on-the-job reception depended on the organisation culture of receiving new staff, which influenced the activities they were able to do to welcome the new arrivals and which level of officers would be involved. In addition, on-the-job reception also depended on whether the organisation was able to facilitate new arrivals with transport or not. Off-the-job reception depended on the relations between the organisation and the community. At times the community initiated their reception activities and at times the hospital management mobilised the community to organise the reception of the new arrival(s). Again, this depended on the organisational culture of each hospital. From the perspective of job embeddedness, the sub-themes under on the job reception fell under on-the-job links, on-the-job fit and on-the-job sacrifice. Those under the off-the-job reception fell under off-the-job links, off-the-job-fit and off-the-job sacrifice. All the activities under the theme of “deployment” fell under on-the-job fit. The next section presents the effects of the integration process on embeddedness and retention.
7.2.3 Effect of integration on job embeddedness and retention

The speed and degree of integration and embeddedness varied with individuals and settings. Several factors influenced the pace of integration. The main ones were a staff shortage, high level of the appointing authority and crisis. Staff shortage quickened the integration because there was no time to spend on orientation. The level of the appointing authority influenced the pace of integration because it showed the degree of trust in the new arrival. Only one participant (NB8) reported to have completely failed to integrate in both the workplace and the community due to ethnic tensions and, as a result, felt that it was time to leave the area:

“It was immediate. I was immediately integrated because I was appointed by the bishop ... I had immediately to take responsibility”.

(MA1, Medical Officer, Hospital I)

The factors that favoured quick integration were mostly of an emergency nature or crisis (such as political upheavals in the country, diplomatic crisis, insecurity, industrial action by staff or sickness of a critical member of staff). Other factors that influenced on-the-job integration included: being given positions of responsibility; similarity with the organisation; good managerial practices; good relations with the management; good facilities; personal effort; advice from parents and others who had worked in the area; prior preparations to fit in a rural area; eagerness to cause change and organisational crisis. Participants who had to undergo rapid integration included MA6, MA11, MB2, NA1 and NA14. In the case of MA6 (Medical Officer, Hospital D) sickness of a colleague, local insecurity and a diplomatic crisis combined to determine the participant’s fate because he was trapped in the area and cut off. What was supposed to be a short locum tenens ended up being a permanent appointment by the central government, which was later overtaken by the Local Governments Act, converting the centrally-appointed health worker into a district employee for over 20 years. Industrial action created a shortage of staff and made emergency recruitment necessary due to the heavy workload:

“By then, when we reached [hospital], there had been a crisis! There had been a strike and of the four doctors, three were involved in the
strike. They had been suspended. ... there was a vacuum! .... We went there, and settled. So, it was a big relief to the doctors who were there” (MA11, Medical Officer, Hospital H)

All the participants interviewed had held a position of responsibility in the organisation at one time or other and some still held them at the time of the interviews. The positions held at the time of the interviews were ward managers/in-charge (NA3 – 8, NA10 – 14, NA16 – 19, NA21 – 23), Principal Nursing Officer (NA20) and Medical Superintendent (MA2 – 3, MA5 – 7, MA10, MB1 – 4). The rest had held similar positions in the past but were not in active office at the time of the study. However, all of them mentioned that holding offices in the hospitals had enabled them to understand the organisations and to integrate better. This made them more committed to working there and, eventually, to staying there for long. Positions of responsibility made the participants deeply and widely enmeshed in different spheres of the hospital such as management circles, staff and community circles and, for some, even in circles of the board of governors, a factor which led to strong integration.

Moreover, it increased the workload, further making the participant deeply integrated and committed to stay. The position of responsibility also provided the participant with opportunities for learning more skills which were then applied in the organisation, and an opportunity to exercise authority. All these led the participants to get more attached to and become embedded in the organisation. A high position of responsibility with a wide locus of control was particularly very satisfying and contributed to both integration and retention. Positions of responsibility also made participants feel obliged to stay and work to realise organisational goals and build personal reputation. Several participants also felt that the responsibility entrusted to them was both too big and too important to be abandoned in pursuit of other interests, thus necessitating their prolonged engagement:

“... I was given additional responsibilities, which ... gave me exposure.... I think that the managerial responsibility that they gave...
me kept me going. And the fact that I was at the head of it, planning for it, there was a lot of autonomy... I was given too much power to manage, planning, to think, budget.....” (MA12, Medical officer, Hospital L)

And:

“..... when they appointed me the Medical Superintendent, at one point I wanted to run away, when I was alone! But I, like, said: “I accepted this responsibility ...., I cannot just walk away. If the hospital collapses, my name will not ......” Yes! So, I headed on!” (MB5, Medical officer, Hospital A)

Participants who shared values with the organisation felt that they got integrated faster and more deeply. Eventually, most of them also stayed for long. The similarities in values were in terms of religion (in case of private faith-based hospitals) and belief in social justice. Apart from just membership to certain religions and personal life history, some participants mentioned specific values they shared with their organisations, such as serving the poor. This was evident where the participant identified with the target population served by the hospital. In one such case, the participant worked in the rural hospital for long because it served the poor, a group to which he too had belonged during childhood.

Therefore, by working in that hospital with a stated preferential option for the poor, he got a chance to serve poor people to whom he was attached. It is this confluence of values and perspectives, such as social justice, that made him attached to the hospital, rather than his religion. All the participants who mentioned having similarities with their organisations were from non-government hospitals. Participants in government hospitals did not identify any similarities they had with their organisations. Instead, a few of them referred to values they had, which they tried to import into government hospitals from non-government facilities where they worked previously, against resistance from fellow staff. They attributed any values in government services to the upbringing and professional ethics of individual staff, or fear of the law, and developing personal bonds with the
community, rather than systemic values. Participants who expressed such feelings were MA5-6 and NA20:

“It is not religious commitment per se. But then, when I look at the religious teachings and then I look at the activities of the hospital, the vision and mission of the hospital, serving the poor, and the less privileged, and then, ... having been less privileged, ...what it is doing is what I would really wish for other people who live in such a place....I have also been in such situations” (MA2, Medical Officer, Hospital I)

And:

“Sincerely, you go away and that is when you are unfortunate enough for five people to die!.... And these are mothers! And what do you tell the Council? (laughs)....My upbringing, first of all.... Secondly, when you stay in a place for some time, there is that sort of....relationship you feel, that at least, you should do some good to that community and just moving away may not be the best”. (MA6, Medical Officer, Hospital D)

Several participants reported that some of the factors that helped them settle down in their rural job very quickly were actions by the managers or fellow staff. All the participants reported to have been introduced to fellow staff around the hospital by the managers who, in some cases, also organised formal welcoming activities and orientation and induction activities. Those who reported receiving this type of assistance were MA1, MA7, MB2, NA1, NB1, NA3 and NA23:

“They would give you a fully furnished house. They only tell you to come with your clothes. You don’t carry utensils, you don’t carry anything!” (NA23, Registered Nurse, Hospital F)

Some participants said that what made them settle down very quickly was the realisation that they were respected in the hospital community. Then, they started

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25 Local Council V, the district assembly
appreciating their own positions as doctors in that society. Respect made them confident, which enabled them to secure a position in the organisation, to anchor to it and become fully integrated. In other cases, what made some participants adapt quickly was their past experience, especially when they got new responsibilities. In such circumstances, previous exposure to rural areas during training or elsewhere paid off. In addition, participants frequently described the creation of an enabling environment as a factor that facilitated their integration and hastened their productivity. This process included ensuring the availability of technical equipment and supplies needed for their work:

“So, what influenced me was just the relationship I had started with the Sisters ....And the MS [Medical Superintendent]... we were respected really! Like when you would go to his office, or when you would have a meeting and they are talking to doctors, the respect is there. ....So, I felt that I am a doctor!....That was the most important!” (MA4, Medical Officer, Hospital L)

And:

“When you are hearing people saying that there are no drugs in government units and so on, for you everything is there! ...so, it kept on, you know, motivating people!” (MA12, Medical Officer, Hospital L)

So, in a way, such participants felt that they did not have any reason for not beginning to work since they had the requirements for their work. Apart from availability of equipment and supplies, even the availability of essential and competent auxiliary staff was very crucial in some non-government hospitals. They played complementary roles e.g. anaesthesia, and the participants could do task-shifting to some cadres, thus reducing their own workload and improving performance:

“I quickly taught some medical assistants how to do evacuations for abortion. ....midwives could do a lot of the difficult obstetric
procedures like vacuum extraction. ..... So, I could only do the Caesarean sections... So that was somewhat a relief”. (MA1, Medical Officer, Hospital I)

Some participants mentioned that integration into the rural area was hastened by advice from their parents or somebody else they respected. In one case (MA11), a mother’s advice encouraged the participant to stop commuting daily on dangerous roads and this paved the way for full integration into the local rural community. In another case (MB3), parents whose son had been requested by a bishop to work in a rural hospital, felt that a request by a bishop to work anywhere was a blessing in itself which their son must take up, irrespective of location. So, they strongly encouraged the participant to accept the request without reservation and report immediately. Others whose parents or close relatives influenced their choices on integration were NB1, and NA7.

Apart from integration on the job, many participants reported the development of links in the community, which also enabled them to fit and eventually become fully integrated in the communities where they were staying. They reported that they joined local social networks in the rural area and this facilitated their entry and settlement into the local rural communities. The networks in which the participants were involved were wedding groups, Savings and Credit Cooperative Organisations (SACCOs) for money saving and lending, and faith-based organisations at churches and mosques. The composition of the clubs was generally diverse. In some of these social networks, they met or were drawn by their colleagues at work, but there were also people of similar interests from other organisations and walks of life. Some participants belonged to multiple groups, for different purposes (e.g. being a member in one group that focuses on socialising, and joining another that focuses on building a saving culture, income-generation etc.). The groups meet regularly and by joining, a member stays engaged and may not even realise that he/she has actually spent a long time in a work station:

“We have our club here. It involves some staff from here and outside [hospital name]. ...Some doctors from other different hospitals, we
have a [army] Major in it, and we have bankers in it. …We save
every month… Those groups, we formed them because we wanted
to socialise in good and bad times” (NA16, Registered Nurse,
Hospital L)

Apart from entertainment and savings groups, other participants belonged to faith-
based associations such as Mothers’ Union, Uganda Muslim Medical Workers
Association and Catholic Women’s Guild26. Membership in some of these
organisations had a very strong influence on the integration of the participants, to
the extent that some of them felt they really belonged to those communities:

“My involvement in that group gives me a sense of belonging and
being owned by the community. And the way I feel relaxed, I think
my mind is settled to work with such a community. Because you
have people that, you know, own you and you belong to them. I
think, in a way it has contributed”. (MA8, Medical officer, Hospital F)

Other social links were through attending social functions of friends and neighbours
such as weddings, parties and funerals, where the participants are often made to sit
in prominent places or requested to give a short health talk. Most participants
reported attending such local social functions. Some participants went ahead to
give information that they regarded as “proof” of their integration in the rural local
community, such as being known by name in the community, even by children.
Other “social proof” of integration for others was that some members of the
community had named their children after them, in recognition of good services
and friendship. This was reported by participants MA1, MB3, NA4, NA8-9, NA11,
NA13-16, NA18-19, NA23 and MB2. Other proof of integration included getting a
spouse from the area where one worked:

“….because of public health, I am a community person. So I am close
to the community. …. there is no child who doesn’t know me. The

26 In Uganda, Mothers’ Union is an association of married women who are lawfully wedded in the
Anglican Church of Uganda. Members learn strong Christian values and family life issues basing on
Anglican teaching. Catholic Women’s Guild is the equivalent of Mothers’ Union for Catholic women.
Many married female participants belonged to either of these bodies.
mothers, the whoever .... Some when I am going in the community and I am passing, I hear them calling my name! “Sr. [name]! Sr. [name]!” .... So what I can say is that people know me. ...... I am known in [the district]. (NA2, Registered Nurse, Hospital I)

And:

“The other one is a relationship with people whom I have been treating and they have named some children after my name” (MB2, Medical Officer, Hospital G)

Several participants reported to have made some economic investments of some sort in the local areas as their approach to integration in the rural area. Some had businesses, and others had gardens for production of food for domestic consumption and commercial purposes. Only a few had medical-related businesses like clinics or drug shops. Others invested in non-medical business like rental houses, plantation forests. Although some participants operated these income-generating activities themselves, some others used proxies to manage the investments for them due to lack of adequate time to attend to the investments, long distance from the work place to the investment and regulations by the employers which prohibited certain economic activities by their staff, specifically, starting medical-related activities within a given short range of distance from the hospital. This was common in faith-based facilities, to avoid the health workers competing with the hospital for the same patients. Where the participants had investments, their integration into the local community was enhanced by the fact that they felt that they served the community and that they employed some members of the local community.

Themes from the section and relation to job embeddedness and retention

This section has presented several facilitators of integration in rural jobs reported by health workers. The themes observable from the findings can be summarised as shown in Fig. 7.4.
Fig. 7.4 Thematic map of influences on integration and embeddedness

Some of the influences on integration were on-the-job while others were off-the-job. On-the-job integration influenced the ability of the participant to integrate off-the-job and vice versa. From the perspective of job embeddedness, factors under the sub-themes of “position of responsibility” and “availability of staff and supplies” were related to on-the-job links, on-the-job fit and on-the-job sacrifice. Factors under the theme of “similarity of values” were mainly under on-the-job fit, while those under “appointing authority” were under on-the-job fit and on-the-job sacrifice. Factors under the sub-themes of “crisis”, “respect” and “social networks” were under both on-the-job and off-the-job. Those under “crisis” were mainly reflected in on-the-job fit and on-the-job links, as well as off-the-job fit and off-the-job links. Factors under “respect” and “social networks” were reflected in all dimensions i.e. on-the-job links, fit and sacrifice and off-the-job links, fit and sacrifice. Among the off-the-job factors, “local investments” were under off-the-job sacrifice. The next section presents the effects of resilience to shocks.
7.2.4 *Effect of resilience to shocks on job embeddedness and retention*

For most participants, working in the rural area was associated with some negative events that can be regarded as “shocks”. For some, the shocks were bad enough as to have caused departure but they resisted them and stayed. This ability to resist and adapt was gained mainly from advice and support received from different sources, some of which were at the workplace and some of which were in the community as well as a good mix and balance of social and technical skills acquired in the preparatory phase. Some advice had been received before beginning to work in the rural areas but most of the advice and support came while the participants were already facing those challenges, as real-time support. Surviving such shocks was, in itself, a test of the embeddedness of the participants. Sources of advice included peers and superiors at their workplace.

The biggest shock experienced by all the participants was heavy workload. It stressed the staff and triggered departures, thus becoming worse for the remaining staff. Some of the participants from PNFP hospitals were the remnants of earlier departures of fellow staff, while others in government facilities were among those who left faith-based hospitals either to look for a better salary in government or to escape the subsequent heavy workload. Interestingly, some of those who left rural PNFP facilities to join the government were posted to even more remote facilities than where they had been. However, they accepted to work there because the salary was better, thus underlining the fact that they did not mind working in rural areas as long as the salary and other benefits associated with government jobs were acceptable to them. Those who resisted the shock of the heavy workload did so mainly because of commitments to their organisations (e.g. being a member of a religious congregation), good management, previous training, strong concern for the local community, being in a position of responsibility, professionalism or simply, personal tenacity. In one case, the medical superintendent of a government hospital (MA7, Medical Officer, Hospital J) did all the night duty and emergency calls alone because all the other doctors resided in an urban area 80 km away, due to the poor condition of their hospital houses. This heavy clinical workload was additional to his routine administrative duties.
The second shock that participants experienced was the heavy responsibility of being accountable for resources of the hospital. It was mainly experienced by the managers, especially those who were not adequately prepared for it, technically and psychologically. This often left some of them feeling incompetent. One participant (MB1, Medical Officer, Hospital D) had a huge stack of papers of pending administrative work accumulated throughout the week, to attend to over the entire weekend because all the official working time in the week was already spent on clinical work. This was the weekly scenario. The participant reported not understanding the full scope of the duties to be done and how to deal with the multiple stakeholders of the hospital. The only reason that maintained the participant in office was the commitment to the sending organisation. Several other participants in managerial positions (MB1-4, MA3, MA5-7) also reported spending at least 60% of their time on clinical work, leaving only 40% for administrative work. Yet, they could not delegate most of the administrative work because either they lacked staff competent in those activities or it was statutory work that they had to do by themselves. Only one participant (MA8) reported to have the right people to delegate to.

Other reported shocks included the risk of occupational infection (some participants had acquired life-threatening conditions from the workplace), professional and physical isolation, dealing with less educated members of the staff and community, corruption by district officials, ethnic favouritism in promotion and allocation of study opportunities, lack of appropriate equipment, politicisation of hospital issues, insecurity etc. To overcome these challenges, the participants often received and relied upon advice from different sources such as their peer managers. Participants reported that they often contacted their homologues in other hospitals or in other managerial positions for advice. With time, they had developed and belonged to peer networks with fellow managers. Peer advice influenced their managerial practices as well as embeddedness in the organisations.

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27 The amount of time spent on different activities varies significantly with the care setting (e.g. emergency or intensive care), the regulatory framework (e.g. USA has more regulatory issues due to avoidance of litigation), and the health system (e.g. systems with more technology spend less time on certain tasks than those with less of it).
Some of their peers eventually became their role-models and encouraged them to stay. Other sources of support and example or encouragement were their superiors:

“…from sharing with my colleagues who were managers before me ..., I progressively learnt that it can become practically difficult for you to become a Medical Superintendent and you don’t go to the ward ... it is likely to be tough for you because they will make mistakes and...you may never know....I realised that 60% of my time was in the ward and 40% in Administration”. (MA3, Medical Officer, Hospital K)

And:

“I have a colleague ...... We were together at Medical School... He is serving well. ...he became the DHO. So, he has been in the field longer than me. And, actually, he has been helping me because I had to consult him, because I was new in the office! He is doing well!” (MB2, Medical Officer, Hospital E)

Another shock that participants reported was the intransigence of government bureaucracy, especially to do with staff recruitment. Several participants concurred that while lack of staff was a big challenge to them, the apparent lack of interest in the issue by government was even more frustrating. As a result, they had had to forge alliances with colleagues from peers in other sectors outside their organisations and from community members and political leaders in order to address the problem jointly. Such alliances were a sign of resilience to the shocks and advanced integration in the community. In one such case, a participant who had failed to solve a managerial problem through the normal channels for two years, due to government bureaucracy, mobilised the community through local politicians. The community members caused artificial chaos for the sake of visibility and the matter was widely publicised by a well-mobilised friendly press. Since the government was not aware of this four-pillar alliance (health worker, media, politicians, community) it intervened immediately and solved the problem in a
single day, yet the normal channels had failed. The scenario demonstrates successful integration of the health worker in the community and development of political skills for successful collaboration with other stakeholders to improve rural health service delivery.

Another shock experienced by the participants was resistance to change by colleagues. This was experienced mostly by those in positions of responsibility, who were new and tried to change the status quo that they had found, such as introducing keeping time in reporting for duty etc. What saved them was support from a few colleagues with whom they made alliances:

“The reception I got was somehow challenging because... people don’t want to change and more especially if it directly affects them. I got in because.... The senior nurses were in total support and they are good, and so with them, we were able to get on well” (NA20, Registered Nurse, Hospital G)

**Themes from the section and relation to job embeddedness and retention**

This section has presented the influences on resilience to shocks which, in turn, influenced retention. They can be summarised in Fig. 7.5.

![Fig. 7.5 Thematic map of influences on resilience to shocks](image)

The main influences on resilience to shock were guidance and support, organisational commitment and training and experience. From a perspective of job embeddedness, the factors under “guidance and support” were related to on-the-
job and off-the-job links. Those under “training and experience” were under on-the-job and off-the-job fit, while those under “organisational commitment” were mainly under on-the-job fit. Multiple factors were identified through the qualitative study as being responsible for the rural job embeddedness of the health workers in Uganda. One may summarise the factors as shown in Fig. 7.6.

Fig. 7.6 Factors affecting job embeddedness in rural health jobs

Overall, the section on qualitative findings has discussed the entry, integration and eventual embeddedness of the participants on their rural jobs and how they managed to resist the shocks that they encountered. Successful job embeddedness depended on good prior preparedness for rural service, which was both social and technical in nature. The participants learnt “hard” and “soft” skills as part of their upbringing and later used them to live in difficult circumstances and among different people. They learnt to be adaptable. They also learnt technical skills which built their competence, willingness and readiness to work in rural areas. They
developed self-efficacy through technical preparation. However, their deployment and reception in the rural area affected their perceptions of the organisation, the management and the community, and eventually influenced their decisions on whether to stay or not. Once they decided to stay, their integration involved forging alliances on the job and off-the job and depended on their organisational commitment and training or experience. The themes observable among the factors responsible for job embeddedness in rural areas are summarised in Fig. 7.7

![Diagram of thematic influences on rural job embeddedness]

**Fig. 7.7 Summary of thematic influences on rural job embeddedness**

The next section presents a quantitative analysis of the degree of embeddedness of the participants, the factors that affect it and how it affects retention.
7.3 Quantitative findings on rural job embeddedness

This section presents the findings obtained with the quantitative 40-item tool of Lee et al. [522] for measuring the degree of rural job embeddedness. At the same sitting as the in-depth interviews, the tool was applied to the same 50 participants immediately after the in-depth interviews.

7.3.1 Overall degree of rural job embeddedness

The degree of rural job embeddedness associated with different factors is presented in Table 7.3. On a Likert scale of 1.0 (completely not embedded) to 5.0 (completely embedded) with a neutral of 3.0, the overall average degree of rural job embeddedness for all participants combined was 3.20 (range: 2.33 -4.06, median = 3.24). This suggests that the overall rural job embeddedness was weak although, judging from the range of the scores, some individuals were strongly embedded. By cadre, doctors were slightly more deeply embedded than nurses, although the difference was not statistically significant. This was also true when compared by employer i.e. government doctors were more deeply embedded than government nurses and PNFP doctors were more deeply embedded than PNFP nurses.

By duration of rural service, those who had served longer were slightly more deeply embedded than those who had served for 3 - 10 years, although the difference was not significant. This was also true among doctors alone, nurses alone, males alone, females alone, government employees alone and PNFP employees alone. The least embedded participant was in the category of those who had served 3 - 10 years and the most embedded had served for more than 10 years. There was a significant relationship between the total duration of rural practice and job embeddedness, although the correlation is weakly positive (Spearman’s rank correlation coefficient, \( r_s = 0.4444, 95\% \text{ CI} = 0.1887 -0.6427, p<0.01 \)). In addition, the relationship between the duration at the current station is weakly positive but significant (\( r_s = 0.4440, 95\% \text{ CI} = 0.1890 – 0.6429, p<0.01 \)). These suggest a weakly positive but significant relationship between job embeddedness and the duration of rural practice. In other words, the longer the staff stays in the rural area, the more he/she is likely to have
been embedded. However, this being a cross-sectional study, it is difficult to tell what comes first i.e. whether staying long leads to embeddedness or being embedded leads to staying longer. At this stage, the temporal relationship can only be imputed from other studies. The ideal would have been a longitudinal study measuring the degree of embeddedness upon commencement of rural practice with follow up measurements over the years.

By sex, males were slightly more deeply embedded than females, although the difference was not statistically significant. By employer, PNFP employees were more deeply embedded than government staff. This difference was statistically significant. Those who had or had had children at the rural workplace were more deeply embedded than those who had not had children, although the difference was not statistically significant. There was no difference in the degree of embeddedness between those who were married or widowed and those who were unmarried. Those who were transported to their workplace were more deeply embedded than those who were not transported, although the difference was not statistically significant, as shown in Table 7.3.
Table 7.3 Average overall degree of embeddedness in rural jobs

*Only one participant available

<table>
<thead>
<tr>
<th>Participant category</th>
<th>Mean (SD)</th>
<th>95% CI</th>
<th>Median (min. – max)</th>
<th>Diff. 95% CI diff</th>
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<th>df</th>
<th>p-value</th>
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<td>No</td>
<td>3.17</td>
<td>3.06 – 3.28</td>
<td>3.20</td>
<td>2.35 – 3.91</td>
<td>-0.23</td>
<td>-0.84 – 0.37</td>
<td>0.940</td>
</tr>
</tbody>
</table>
Whereas the overall degree of rural job embeddedness was weak, Fig. 7.8 shows that, on individual basis, the majority of the participants scored above the neutral score of 3.0 and some showed strong degrees of embeddedness. This shows that the majority of the staff were embedded in rural area jobs.

![Overall individual rural job embeddedness](image)

**Fig. 7.8 Overall individual rural job embeddedness**

### 7.3.2 Job embeddedness by duration of service in a rural area

Although most participants (42/50) had a purely rural career, some others (8/50) had served in both rural and urban facilities. Of the 42 who had a purely rural career, 24 had worked only in one facility where I found them and 18 had moved from one or several other rural location(s) to the present one. I analysed the total rural practice and the rural duration in the same facility. The total duration of rural service by individual participants ranged from 3 to 44 years (mean = 18.87, median = 17.00, Standard Deviation = 11.60) (see Table 7.4). The longest service in a rural area was by a male nurse. The duration of service at the current hospital ranged from 2 to 33 years (mean = 14.80 years, median = 13.0 years, Standard Deviation = 9.37 years). The individual who had served longest in the same hospital was a female nurse. By cadre, nurses had spent a longer total period in a rural area than doctors (mean duration = 19.76 years vs 17.15 years) and in the same station (15.52 vs 13.41 years), although the differences were not statistically significant, as shown in Table 7.3. This observation was consistently in favour of nurses even among the long-serving staff compared by cadre (25.65 vs 21.92 for total rural duration and 19.87 vs 16.83 years in the same station) as shown in Table 7.4.
Analysis by employer shows that overall staff retention was much stronger at rural PNFP facilities than government facilities, and the difference was statistically significant (18.43 vs 12.17 years, p = 0.002). Although government facilities retained doctors longer than PNFP facilities, the difference was not statistically significant (15.38 vs 11.67, p = 0.29). PNFP facilities retained nurses much longer than government facilities and the difference was statistically significant (23.50 vs 10.00, p<0.01). However, this difference might be exaggerated by the fact that there were no nurses who had served between 3 and 10 years among the PNFP participants. By sex, there was no difference in duration of service at the same rural station since the average duration was 14.8 years for both sexes.
Table 7.4 Duration of service in rural areas and at current station

*Only one government doctor was in the 3 – 10 years category **The sample did not include nurses from PNFP who had served 3 – 10 years

<table>
<thead>
<tr>
<th>Cadre</th>
<th>Mean (yrs)</th>
<th>Range (min. – max.)</th>
<th>Difference (yrs)</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total rural service</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All participants</td>
<td>18.87</td>
<td>3.00 – 44.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All doctors</td>
<td>17.15</td>
<td>3.00 – 43.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All nurses</td>
<td>19.76</td>
<td>3.00 – 44.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctors (3 – 10 yrs)</td>
<td>5.70</td>
<td>3.00 – 10.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurses (3 – 10 yrs)</td>
<td>6.20</td>
<td>3.00 – 10.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctors (&gt;10 yrs)</td>
<td>21.92</td>
<td>11.00 – 43.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurses (&gt;10 yrs)</td>
<td>25.65</td>
<td>11.00 – 44.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service at current station</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All participants</td>
<td>14.80</td>
<td>2.00 – 33.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All doctors</td>
<td>13.41</td>
<td>3.00 – 29.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All nurses</td>
<td>15.52</td>
<td>2.00 – 33.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctors (3 – 10 yrs)</td>
<td>5.20</td>
<td>3.00 – 10.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurses (3 – 10 yrs)</td>
<td>5.50</td>
<td>2.00 – 10.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctors (&gt;10 yrs)</td>
<td>16.83</td>
<td>11.00 – 29.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurses (&gt;10 yrs)</td>
<td>19.87</td>
<td>3.00 – 33.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service at current station, by employer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All gov’t staff</td>
<td>12.17</td>
<td>2.00 - 33.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All PNFP staff</td>
<td>18.43</td>
<td>3.50 - 32.00</td>
<td>6.26</td>
<td>0.002</td>
</tr>
<tr>
<td>All gov’t doctors</td>
<td>15.38</td>
<td>3.00 - 20.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All gov’t nurses</td>
<td>10.00</td>
<td>2.00 - 33.00</td>
<td>4.42</td>
<td>0.13</td>
</tr>
<tr>
<td>Gov’t doctors (3 -10 yrs)*</td>
<td>3.00</td>
<td>3.00 – 3.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gov’t nurses (3 – 10 yrs)</td>
<td>5.50</td>
<td>2.00 – 9.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Gov’t doctors (&gt;10 yrs)</td>
<td>17.14</td>
<td>13.00 – 20.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gov’t nurses (&gt;10 yrs)</td>
<td>15.91</td>
<td>3.00 – 33.00</td>
<td>1.23</td>
<td>0.72</td>
</tr>
<tr>
<td>All PNFP doctors</td>
<td>11.67</td>
<td>3.50 - 29.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All PNFP nurses</td>
<td>23.50</td>
<td>10.00 - 32.00</td>
<td>11.83</td>
<td>0.003</td>
</tr>
<tr>
<td>PNFP doctors (3 -10 yrs)</td>
<td>5.75</td>
<td>3.50 - 10.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PNFP nurses (3 – 10 yrs)**</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PNFP doctors (&gt;10 yrs)</td>
<td>16.40</td>
<td>11.00 - 29.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PNFP nurses (&gt;10 yrs)</td>
<td>23.50</td>
<td>10.00 - 32.00</td>
<td>7.10</td>
<td>0.13</td>
</tr>
</tbody>
</table>

I also undertook analysis of the degree of embeddedness by domain (links, fit and sacrifice). The results are presented in Table 7.5.
Table 7.5 Embeddedness Scores by Duration of service and Cadre

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Duration of service</th>
<th>On-the-job</th>
<th>Off-the-job</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Doctors</td>
<td>RNs</td>
<td>p-value</td>
</tr>
<tr>
<td>1. Links</td>
<td>3-10 yrs</td>
<td>2.08</td>
<td>1.63</td>
</tr>
<tr>
<td></td>
<td>&gt;10 yrs</td>
<td>2.59</td>
<td>2.42</td>
</tr>
<tr>
<td></td>
<td>Altogether</td>
<td>2.44</td>
<td>2.18</td>
</tr>
<tr>
<td>2. Fit</td>
<td>3-10 yrs</td>
<td>4.22</td>
<td>3.93</td>
</tr>
<tr>
<td></td>
<td>&gt;10 yrs</td>
<td>4.11</td>
<td>4.09</td>
</tr>
<tr>
<td></td>
<td>Altogether</td>
<td>4.14</td>
<td>4.04</td>
</tr>
<tr>
<td>3. Sacrifice</td>
<td>3-10 yrs</td>
<td>3.46</td>
<td>3.01</td>
</tr>
<tr>
<td></td>
<td>&gt;10 yrs</td>
<td>2.99</td>
<td>3.11</td>
</tr>
<tr>
<td></td>
<td>Altogether</td>
<td>3.13</td>
<td>3.08</td>
</tr>
</tbody>
</table>

As general statements, the table shows that the overall scores of doctors on links, fit and sacrifice were generally higher than those for the nurses, both on-the-job and off-the-job. However, the overall differences in degree of job embeddedness were not statistically significant. In addition, measures from the domain of Fit were stronger than measures on Links and Sacrifice both on the job and off the job. Nurses had stronger off-the-job links than doctors among those who had served for 3 - 10 years and the difference was statistically significant (3.08 vs 1.75, p <0.01).

The difference between the strength of off-the-job links of doctors and nurses who had served for more than 10 years was also significant, in favour of the doctors. In terms of fit, doctors had better fit than nurses except in case of staff who had served for 10 or more years, although the difference was not significant. Regarding sacrifice, nurses who had served for more than 10 years felt that they would sacrifice more on the job and off the job compared to the doctors, although the differences were also not statistically significant. In Table 7.6 I present the results of analysis of embeddedness by employer.

From the analysis, the overall strength of on-the-job links for all participants, on a scale of 1 (weakest) to 5 (strongest), was 2.27 (SD: 0.58, range: 1.21 – 3.79). By cadre, the degree of on-the-job links was strongest among doctors who had served for more than 10 years and weakest among nurses who had served 3 - 10 years. Overall, on-the-job links were stronger among doctors compared to nurses, but the difference was not statistically significant. However, since the average score did not exceed the neutral of 3.0, it suggests that, overall, they did not have good links at
the work-place, although the individual with the strongest on-the-job links had a score of 3.79. By duration of rural service, the longer-serving staff, when combined, had stronger on-the-job links than their newer counterparts combined, and the difference was statistically significant (2.48 vs 1.78, p = <0.001). This is in line with what would be expected, that embeddedness increases with duration of rural practice. Employees of faith-based hospitals had stronger on-the-job links than those of government, although the difference was not statistically significant (2.43 vs 2.15, p=0.09). However, government doctors were more strongly linked on the job than their faith-based hospital counterparts, although the difference was not statistically significant (2.63 vs 2.28, p=0.159), while faith-based hospital nurses were more strongly linked on the job than their government counterparts, and the difference was statistically significant (2.55 vs 1.97, p<0.01). These relations were consistent even when the groups were compared by duration of service, as shown in Table 7.6

The overall result for off-the-job links for all the participants combined was 2.51 (range: 1.00 – 5.00), suggesting low off-the job embeddedness. Although off the job links of all the participants were stronger than their on-the-job links, the difference was not statistically significant (2.51 vs 2.27, p=0.140). Off-the-job links were strongest among the nurses who had served for 3 - 10 years (3.08) and weakest among the doctors who had served 3 - 10 years (1.75). Overall, off-the-job links were stronger among doctors than among nurses but the difference was not statistically significant (2.62 vs 2.46, p = 0.564). By duration of rural service, the newer staff combined had a surprisingly stronger degree of off-the-job links than the longer-serving staff combined (2.61 for newer staff vs 2.47 for the longer-serving staff).
Table 7.6 Job embeddedness by domain, cadre and employer

*Only one participant in category **No participants in category

<table>
<thead>
<tr>
<th>Domain</th>
<th>Employer</th>
<th>Duration of service</th>
<th>On-the-job</th>
<th>Off-the-job</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Drs</td>
<td>RNs</td>
</tr>
<tr>
<td>Links</td>
<td>Gov’t</td>
<td>3-10 yrs</td>
<td>2.23*</td>
<td>1.63</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;10 yrs</td>
<td>2.68</td>
<td>2.28</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Altogether</td>
<td>2.63</td>
<td>1.97</td>
</tr>
<tr>
<td></td>
<td>PNFP</td>
<td>3-10 yrs</td>
<td>2.05**</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;10 yrs</td>
<td>2.46</td>
<td>2.55</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Altogether</td>
<td>2.28</td>
<td>2.55</td>
</tr>
<tr>
<td></td>
<td>Fit</td>
<td>Gov’t</td>
<td>3-10 yrs</td>
<td>4.56*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;10 yrs</td>
<td>3.82</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Altogether</td>
<td>3.92</td>
<td>3.98</td>
</tr>
<tr>
<td></td>
<td>PNFP</td>
<td>3-10 yrs</td>
<td>4.14**</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;10 yrs</td>
<td>4.51</td>
<td>4.14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Altogether</td>
<td>4.35</td>
<td>4.14</td>
</tr>
<tr>
<td></td>
<td>Sacrifice</td>
<td>Gov’t</td>
<td>3-10 yrs</td>
<td>3.40*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;10 yrs</td>
<td>2.84</td>
<td>3.05</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Altogether</td>
<td>2.91</td>
<td>3.03</td>
</tr>
<tr>
<td></td>
<td>PNFP</td>
<td>3-10 yrs</td>
<td>3.48</td>
<td>3.01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;10 yrs</td>
<td>3.20</td>
<td>3.17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Altogether</td>
<td>3.32</td>
<td>3.17</td>
</tr>
</tbody>
</table>

By employer, government employees had consistently stronger off-the-job links than their faith-based hospital counterparts, although it was not statistically significant. For example, their overall off-the-job embeddedness was 2.58 vs 2.41, p = 0.557, and that among doctors was 2.72 for government doctors vs 2.53, p = 0.642, for faith-based hospital doctors. However, when compared by duration of service, long-serving faith-based doctors and nurses (service >10 years) had stronger off-the-job links than their government counterparts.

Fit items had the strongest scores in all the domains. The overall result for on-the-job fit of all participants combined was 4.08. On-the-job fit scores were high among PNFP staff compared to government staff, although the differences were not statistically significant (nurses: 4.13 vs 3.98, p=0.414; doctors: 4.34 vs 3.92, p=0.178). By cadre, the overall on-the-job fit was stronger among doctors than among nurses but the difference was not statistically significant although both groups were reasonably strongly fitted in their jobs (4.14 vs 4.04, p=0.559).
duration of service, the longer-serving government doctors had a slightly weaker
degree of on-the-job fit than their newer counterparts (3.82 vs 4.56), but the results
are not very comparable since there was only one new participant. Among PNFP
doctors, longer-serving staff had a stronger on-the-job fit but the difference was
not statistically significant, although both groups were reasonably strongly fitted in
their jobs (4.51 vs 4.14, p=0.339). Among government nurses, there was no
significant difference in on-the-job fit between long-serving and newer staff (4.03 vs
3.93, p=0.683). Employees of faith-based hospitals had consistently much stronger
on-the-job fit than their government counterparts on all the parameters assessed,
although the difference was not statistically significant (4.23 vs 3.97, p=0.086).

The overall result for off-the-job fit for all participants combined was 3.74 (SD:
0.72). This was weaker than on-the-job fit for all the participants combined, and the
difference was statistically significant (3.74 vs 4.08, p<0.01). Off-the-job fit was
strongest for nurses who had served for more than 10 years (3.91) and weakest
among doctors who had served 3 - 10 years (2.68). By cadre, however, the overall
off-the-job fit was stronger among doctors than among nurses but the difference
was not statistically significant (3.79 vs 3.71, p=0.685). By duration of service, the
longer-serving staff tended to have a slightly stronger degree of fit than their newer
counterparts, and this difference was statistically significant for nurses (3.91 vs
3.24, p=0.026) but not for doctors (3.83 vs 3.68, p=0.618). This was also expected
basing on the assumption that embeddedness increases with duration of retention.
By employer, staff of PNFP hospitals also fit more strongly off-the-job than
government staff (4.19 vs 3.41, p<0.01) and consistently stronger for all the items
as shown in Table 7.6.

The overall result for on-the-job sacrifice for all participants combined was 3.10.
On-the-job sacrifice was strongest among doctors who had served 3 - 10 years
(3.46) and weakest among doctors who had served for more than 10 years (2.99).
By cadre, the overall on-the-job sacrifice was stronger for doctors than for nurses,
but the difference was not statistically significant (3.13 vs 3.08, p=0.778). In terms
of duration of service, the newer staff had a slightly stronger score than their
longer-serving counterparts but the difference was not statistically significant (3.16
vs 3.07, p=0.629). By employer, PNFP staff had slightly more to sacrifice on-the-job than government health workers but the difference was not statistically significant (3.23 vs 3.00, p=0.188). The overall result for off-the-job sacrifice for all the participants combined was 3.51. This was much stronger than the overall on-job sacrifice and the difference was statistically significant (3.51 vs 3.10, p=<0.01), suggesting that the participants had stronger connections to sacrifice in the community than on the job. Off-the-job sacrifice was strongest among doctors who had served 3 - 10 years (3.87) and weakest among nurses who had served 3 - 10 years (3.27). By cadre, off-the-job sacrifice was stronger among doctors than nurses, but the difference was not statistically significant. In terms of duration of service, the longer-serving staff had a slightly stronger score than their newer counterparts although the difference was not statistically significant (3.52 vs 3.47, p=0.674). By employer, PNFP staff consistently demonstrated bigger sacrifice to make off-the-job than their government counterparts in the items assessed (3.70 vs 3.37, p=0.058).

I also compared the participants’ overall degree of on-the-job embeddedness to their off-the-job embeddedness by averaging all the on-the-job scores separately from the off-the-job scores. Analysis shows that the off-the-job embeddedness of the participants was slightly stronger than that on-the-job, although the difference was not statistically significant (3.25 vs 3.15, p=0.255). The overall degree of on-the-job embeddedness of all the participants combined ranged from 2.28 to 3.75. That for off-the-job embeddedness ranged from 2.18 to 4.44. Analysis by cadre also showed that this picture was consistent for all cadres, surprisingly showing that doctors who had served in the rural area for 3 - 10 years had the strongest job embeddedness both on-the-job and off-the-job. Their degree of rural job embeddedness was 3.46 off-the-job and 3.42 on the job while that for doctors who had served for more than 10 years was 3.31 off-the-job and 3.17 on-the-job. The score for nurses who had served more than 10 years was 3.20 off-the-job and 3.10 on-the-job, while that for nurses who had served for 3 - 10 years was 3.15 off-the-job and 2.85 on-the-job.
Overall, the participants’ strongest scores as a group were on fit items, especially on the job fit. This suggests that they had similar objectives and values to those of the organisations for which they worked. Also of importance is the fact that, being an organisational issue, “fit” items are an area on which managers can have influence. Fit results from similarity of objectives and values, but also from clear roles and non-overlapping job descriptions, the quality of reception, orientation and good managerial practices, in general. Therefore, this study opens multiple avenues for managers to act in order to strengthen the job embeddedness and retention of their staff.

I analysed the participants’ intention to leave their rural jobs, excluding impending retirement as a reason for leaving because none of the participants was due to retire within one year. The majority of the participants (40/50) did not intend to leave a rural area in the immediate future (estimated at one year). Only 10 participants had plans to leave the rural area in the immediate future. However, some of those who wanted to stay in the rural area wished to transfer their services to other rural areas nearer to their homes. A consistent observation was that those who did not want to leave the rural area had served longer than those who wanted to leave, as shown in Table 7.7.

The average duration of rural practice in the same station among those who wanted to leave the rural area was 12.35 years compared to 15.61 among those who did not intend to leave the rural area. Those who intended to leave were also slightly less embedded than those who did not intend to leave, but the difference was not statistically significant (overall job embeddedness: 3.14 vs 3.21, p=0.665). Using a degree of job embeddedness of 3.0 as the cut-off for embeddedness (i.e. ≤3.0 = not embedded, >3.0 = embedded), I found that, in this study, job embeddedness per se was not protective against intention to quit the rural station (Odds Ratio = 0.89, 95% CI: 0.19 – 4.05, p-value = 0.87) (see Table 0.5 in Appendix 10). This suggests that there are other factors other than job embeddedness that are responsible for retention. Therefore, this suggests that job embeddedness is not the sole influence on retention, which is consistent with the characteristics of a mediator.
By cadre, doctors were seven times more likely to intend to leave rural stations than nurses, and this relationship was statistically significant (Odds Ratio = 7.00, 95% CI: 1.52-32.33, p-value =0.013) (see Table 0.6 in Appendix 10, page 340). By employer, although government employees appeared to be more likely to intend to leave the rural station than PNFP staff, the relationship was not statistically significant (Odds Ratio: 1.36, 95% CI: 0.33 – 5.55, p-value =0.671) (see Table 0.7 in Appendix 10, page 340). By sex, although males appeared more likely to intend to leave than females, this relationship was also not statistically significant (Odds Ratio: 3.12, 95% CI: 0.75 – 12.99, p-value = 0.119) (see Table 0.8 in Appendix 10, page 340).
Table 7.7 Intention to quit analysis

NB: L-O = Links-Organisation, L-C = Links-Community, F-O = Fit-Organisation, F-C = Fit-Community, S-O = Sacrifice-Organisation, S-C = Sacrifice-Community. *One participant only

<table>
<thead>
<tr>
<th>Intention to quit by group</th>
<th>No.</th>
<th>Duration in same station (yrs)</th>
<th>L-O</th>
<th>L-C</th>
<th>F-O</th>
<th>F-C</th>
<th>S-O</th>
<th>S-C</th>
<th>Overall Job Embed.</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(All participants)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Yes</td>
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Logistic regression analysis revealed three factors significantly associated with intention to leave a rural area as shown in Table 7.8.
Table 7.8 Predictors of intention to quit

<table>
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<tr>
<th>Retained Variable</th>
<th>Coefficient</th>
<th>Odds Ratio</th>
<th>95% Confidence Interval</th>
<th>P-value</th>
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<td>Being near home</td>
<td>-3.02114</td>
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<td>Return of service</td>
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<td>Having similar values as organisation</td>
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Variables excluded from the model

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<th>Rural professional educations</th>
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<td>Rural upbringing</td>
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<td>Rural secondary education</td>
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<td>Degree of job embeddedness</td>
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The table shows that being near home and being bonded for return-of-service are significantly protective against intention to quit the rural area. However, and ironically, having similar values as the organisation increases the likelihood of intending to quit the rural area.

7.4 Conclusion

This chapter has presented the factors that led to the job embeddedness of the participants in this study and their degree of job embeddedness. It has shown that job embeddedness resulted from preparedness, reception, integration and ability to withstand and adjust to shocks. By cadre, social preparations were much more prominent in interviews with nurses than with doctors, while technical preparation was mainly offered to doctors. The majority of the nurses did not undergo technical preparation for the rural areas. Their training was generic, to enable them to fit anywhere in the country. It has also shown that there is a shift in training policy over the years, with all the junior doctors having been exposed to rural areas during training, while some more senior ones were not. Both social and technical preparations contributed significantly to retention of the participants in the rural area.

Using quantitative measures, the chapter shows the relative weight of different factors in employees’ retention in the rural area. It has shown that, in this study, fit, especially on-the-job fit, was the strongest parameter of their job embeddedness. It also showed that health workers in faith-based hospitals were consistently more
strongly embedded than their counterparts in government on most parameters. In addition, males, government employees and doctors were more likely to intend to leave a rural area than other participants. The next chapter presents the factors that affected the retention of health workers, which comes along with being embedded on the job and in the community.
8 FINDINGS III: FACTORS RESPONSIBLE FOR RETENTION

8.1 Introduction
Retention is a result of a process that involves several stages, one of which is embeddedness on the job. When an employee gets deeply embedded, the chances of being retained for long also increase. The two preceding chapters described the development of embeddedness of rural health workers, starting from how they were attracted, to how they became embedded. This chapter aims to elucidate the reasons for retention after integration and embeddedness. The reasons are organised in four overarching categories under which they fall i.e. professional, social, policy or legal and reasons that led to satisfaction or compromise.

8.2 Reasons for retention
The participants mentioned multiple reasons that were responsible for retention in rural areas. I grouped them into four categories on the basis of their relatedness.

8.2.1 Effect of profession-related reasons on retention
Many participants mentioned reasons that were related to the exercise of their profession as being responsible for their retention. Several participants reported that they were able to work in rural areas for long because they loved their profession and felt that a hospital in the rural setting was the only place where they could practice their professions properly and ethically. This was because rural areas mainly have poor people who are in need and the only motive to care for them would be to make them recover or get comfort, unlike in urban areas where care may be influenced by monetary concerns. Some participants felt that if they left the rural area, they would end up practicing “urban medicine”, which they perceived to be more focused on obtaining money from the patients than professionally managing their conditions according to need. Therefore, they felt satisfied with their choice to work in a rural environment because it is in line with their thinking and they were happy to be retained there. For others, choice of rural practice was also a clear choice between serving the rich or the poor, since rural areas have poorer people than urban areas. Others felt that rural areas are the only places suitable for good professional and ethical practice, with fewer temptations for
corruption because the people are poor anyway. For some, staying in the rural area was considered a choice of their profession over other careers because, in a rural area, they can persist in the profession even with financial problems, as opposed to urban areas where they may be lured into other activities. Therefore, for them, the choice to stay in a rural area is also a choice to stay in the profession:

“Professionally, working in a rural area, you are going to follow more professional ethics than in urban settings... because ... the clients who are coming are really very poor...assuming you are bad-hearted and you want to extort money from them, you will not even get a lot of money from them. ....Therefore, it tends to limit professional bias... it is ...easy to follow ethical procedures in a rural setting”.
(MB4, Medical Officer, Hospital A)

And:

“Me I know that if I left [the rural area], maybe, I would have ended in business and yet, really, me, I want nursing...There are times when you feel that: “Maybe, I should leave!” But you say: “When I leave and go there, can I forget my nursing?” ...And that is what I didn’t want!” (NA16, Registered Nurse, Hospital L)

Several participants explained that they chose to stay in the rural area because they had role-models who were also staying in rural areas. They perceived those role models to have great devotion and love for patients and to sacrifice a lot to have them cured. The participants felt that they, too, should emulate such persons in loving patients and stay in the rural areas with the patients. They were satisfied with being in a rural area because it was their choice. Other participants opted to stay in the rural areas because they felt that it is where their services were needed greatly and where they could have impact on the health of the residents:

“She is a [nationality]...She liked these patients like they were her real relatives, like her real friends. She really loved these patients. .... Then when she left, she left a doctor .... Actually, he is the one who
encouraged us to stay because he was also seconded ..... he also stayed here for a very long time. So we said: “If he stayed here, why not ourselves?” (NA9, Registered Nurse, Hospital C)

And:

“I work in a rural area because that is where I find more challenges, more people who cannot reach Kampala but who can make me feel fulfilled” (MB1, Medical Officer, Hospital C)

Some participants had gone to rural areas on trial basis thinking they would leave after a short while. However, they eventually liked the areas and stayed because of the good working conditions, supplies and facilities that enabled them to fulfil their professional goals of providing good quality care that is affordable to patients. This was because they believed that cost should not be a barrier to care. Participants who had this sentiment were MA1-2, MA4, MA12, MB1, NA6 and NA9:

“I found this place was better... the working environment was conducive. .... if you wanted to give medicine, you would give it.... You would not ask a patient to go and look for it. If you wanted to do a dressing, you would not ask the patient to go and buy cotton wool! It was very easy.... You would not ask the patient: “Touch your pocket\textsuperscript{28} and I give you the injection”. I found I liked the way the system was....That is why I actually kept on. I found myself staying!.... But I kept thinking: “Are there better places?” (NA9, Registered Nurse, Hospital C)

Some participants who had ever worked at lower level health facilities in rural areas preferred to work in rural hospitals, because hospital level offered them anonymity from the community and protection due to collegiality. Several participants mentioned that they were better off working where they were than lower levels because they could consult more senior colleagues and they were not alone in making complex decisions about patients.

\textsuperscript{28} A colloquial phrase meaning “bring a bribe”
“In the hospital, you have some protection from the administration or the hospital protects you. In the health units, you are exposed! You are on your own! Directly with the public! The public – they are free to say anything about you! ....But while we are in the hospital, nobody knows about us” (NA10 Registered Nurse, Hospital E)

And:

“At least in the hospital I diagnose and I am near a doctor. There I can be able to ask, but in the health centre, if you fail, there is no way! You are forced now to refer to a higher level”. (NB2, Registered Nurse, Hospital E)

Other participants decided to stay in the rural areas because they perceived the managers of their rural hospitals to exhibit good managerial practices and professionalism, like respect for colleagues, providing mentorship, organisational justice, equity, non-discrimination, good communication practices and subsidiarity:

“.... whenever there was a feast or what, we always got equal things. Say, if it was time for shoes, if it was a pair, it is a pair for everybody. If they were old clothes, they would count the children you have. If you got more, well, it was because you had children”. (NA1, Registered Nurse, Hospital I)

And:

“For sure, they don’t discriminate. .....Once you do your work, they take you as a human being. They don’t react. Once they react, it is... unless when you have gone beyond. And even if you have gone beyond, their reaction is friendly!...I would regard them as good administrators.....” (MA4)

Some other participants stayed in the rural areas because they had powerful positions of responsibility and felt that they would not get similar positions in urban areas. The positions came with power and opportunities, which served as incentives
to remain in the rural area, and even contributed to the career progression of the participants by giving them new skills as a bonus incentive. Other participants sought rural jobs because of their associated job security, especially if they were in government. Some participants stayed in the rural areas because they felt that they had sufficient confidence in their professional competence and were capable of practicing in rural areas. Others stayed because they were comfortable, given the good attitude of the managers of their hospital. All the reasons cited above indicate that the participants were satisfied with their choice of rural practice, mostly for professional reasons, although some received additional financial and other benefits.

Some participants stayed for long out of concern for the community they would abandon. Others wanted to stay until they had got a replacement so that they could go in an orderly manner, because they valued their public and professional image, their relationship with the appointing authority and career. In general, the participants in positions of responsibility viewed leaving with great caution. They valued the opportunity of leaving the rural area in harmony so that they may have an opportunity to return if need ever arose, rather than escaping to get new opportunities. According to them, this became necessary after witnessing experiences of close friends who faced problems when they left unceremoniously. Inability to find a replacement seemed to have been reinforced by the fact that the same health workers had developed significant bonds with the local community, such that they felt that leaving would be tantamount to abandoning the community. To them, leaving the rural areas appeared to be more of a moral question, than a question of career progression or seeking to fulfil other personal goals:

“And you never can tell. You can go somewhere and things backfire! (laughs) .... If your leaving was not the best, you may find it difficult .......if you need someone to recommend you, who knows you, you would get the recommendation far, far easier if you’ve shown some bit of commitment.....” (MA6, Medical Officer, Hospital D)
And:

“I had a challenge. When I, now, almost remained alone here, there was no way I could just leave the hospital until I could get somebody to replace me. It has been a bit challenging”. (MA5, Medical Officer, Hospital G)

The concept of health workers feeling a necessity of not moving until they have got somebody else to replace them is a recurrent theme in the study, with some participants saying that they were either tasked or felt it to be their responsibility to get somebody else before they could move. Some of them had been recruited so that somebody else could move, and felt that before they too could move, they would have to get somebody else to replace them. Therefore, they stayed until such a time when they got a suitable replacement. To appreciate the importance of the participants being alone at the work-station, some participants narrated their typical day, to give an indication as to why they found it hard to leave. With that amount of workload, they did not imagine abandoning the stations to go to look for better jobs elsewhere and leaving the stations unattended:

“...that work alone is so much! Sometimes, you have just left theatre, maybe by 10.00 in the night, at 2.00 you are being woken up! You come back at 5.00, immediately you are called. Sometimes you don’t even go back, you just continue with the ward-round! So, that work is quite tiresome”. (MB2, Medical Officer, Hospital E)

And:

“…..even getting a routine becomes difficult! Because, as you come in, they call for a Caesar. That is if they have not woken you up. And the whole day goes! ...... you do things without any plan! “It is a Caesar!”... “It is a laparotomy!”...you operate on patients and follow up becomes a problem because of the workload” (MA6, Medical Officer, Hospital, D)
Some participants in senior positions of responsibility also felt that they would miss their power and positions if they left their organisations. This mainly related to the uncertainty of where they would be going, aware that it may not be easy to obtain another senior equivalent or better position. Many participants felt that they were not sure how a new place would treat them and were wary of starting afresh. Reluctance to change location was evident in the responses, and influenced the stay-go mental considerations:

“I [would] miss being the boss! …. it is the biggest thing that I [would] miss, to be able to be in a position whereby people come with a very good idea and once you buy the idea……There is change!..” (MB3, Medical Officer, Hospital K)

Several participants, especially those from the faith-based facilities, mentioned that they were able to stay because of the similarities they shared with the organisations in which they worked. The similarities were mainly due to being of the same religion as the foundation body of the hospital or having similar views on other values such as social justice. For example, a participant felt that it was motivating to serve in an organisation which emphasised the healing mission of Christ, while another attributed success in the profession to pre-selection, vocation and oversight by God, thus hinting at elements of religiosity in people’s choices:

“So, the religion, and the hospital being Catholic-founded... it helped and we also had meetings ... stressing on commitment, telling us that the hospital was private not-for-profit.... of course... - the healing mission of Jesus Christ... all these things played a role to keep us motivated. So, religion definitely played a role”. (MA1, Medical Officer, Hospital I)

And:

“For us, we were chosen by God to do the work. And there is somewhere you reach and you know that this work, I am not doing it alone really! ... And if you reach somewhere and....You cannot put up
a drip, you have failed! Then you call upon Him that: “You are the one who sent me here! Come and we work!” You normally go through! Although you may begin without telling Him...” (NA10, Registered Nurse, Hospital E)

Several other participants admitted to have stayed in the rural areas for economic reasons. The main economic reasons for staying in the rural areas were a good salary, additional incentives, having economic investments in the rural area, and prospects of making additional income in the rural area. Some participants remained in the rural areas because they were getting better salary than they would have expected to get in the urban areas, especially those who were seconded by international NGOs to rural hospitals. In such cases, the management of the local hospital was asked to pay a salary which the NGO would top-up. The resulting better financial package served as an incentive for both attraction and retention in the rural area and enhanced their decision to stay:

“....I was sponsored by an organisation ... they discussed with me and said: “We have a hospital called...... We want a doctor whom we can take there and sort of sponsor that person a bit, with a little bit of extra money on top of salary and see how it can work” (MA3, Medical Officer, Hospital L)

And:

“...the proposed salary at that time was [amount]. ..... I just said: “It’s OK. We can begin from here”. In my mind, I was like: “This is too good!”” (MB3, Medical Officer, Hospital K)

Apart from a good salary, some participants had other non-financial incentives that contributed to their staying in the rural areas, which they did not want to miss. Such benefits included free medical care, accommodation, and utilities. Participants stayed because they knew that it is not easy to get similar offers in urban areas:

“...why I am here, ..... there are some of the fringe benefits that we are being given. ... I am entitled to free medication and, .... I can have
three of my dependants who can also access medical treatment.
Unlike in urban setting, I am not sure that you can access that in any
of those health facilities. ...... Here I am given water. .. Electricity... it
is also one of the necessities. I am given free of charge!” (NA, 15,
Registered Nurse, Hospital L)

Apart from what they received from their employers, several participants reported
that they stayed in rural areas because they felt that there were good prospects for
making supplementary income to boost their salary. Most participants engaged in
non-medical business, which they considered to be more profitable. In several
cases, such economic activities became the main reason why they actually stayed in
rural areas, even more important than their health care jobs. Some participants
made rural investments like rentable buildings, plantation forests, cash crop
plantations e.g. cocoa etc. Therefore, they wanted to stay nearby in order to
monitor and to manage them:

“So, money was coming in.....I got engaged in other business now,
non-medical ... Even coffee! ...produce! And there was more money
in the produce than the medicine! Yes! So, that is why even after the
Masters, I went back. It was not more of financial from the medical!
From the non-medical!” (MA11, Medical Officer, Hospital H)

Although very few, some participants mentioned that they would miss the physical
amenities at the workplace, such as good and free housing and utilities. This is
partly because many rural hospitals were in a state of disrepair and such facilities
were no longer considered of good quality. However, some participants valued
them due to the privacy they offered and the fact that they are free. Some hospitals
also offered free utilities, which the participants mentioned that they would miss if
they left the rural area:

29 The government hospitals which I visited were constructed in 1969 as part of a major
infrastructure project, and have not had major repairs since. Most of their infrastructure, including
staff accommodation and medical equipment, is in disrepair. There is an ongoing government
project trying to revamp a few of those hospitals but the majority remains dilapidated.
“Maybe, I would miss my house because I love it....It is private. You stay in your own enclosure there. Nobody interrupts, unless you like going outside”. (NA12, Registered Nurse, Hospital F)

And:

“What I know, outside there, things like accommodation, water and electricity, you can’t get them free. .... As I talk, at least for the last five or ten years, those utilities have been free. So, if I left this place ....I would miss those utilities. ... Those are the things I would miss here!” (MA10, Medical Officer, Hospital B)

8.2.2 Effect of social reasons on retention

Many participants cited social reasons for their retention in rural areas. Some chose to work in the rural area because it was their home area. They had their families and relatives in those places. By working from the home area, they would be able to attend to domestic issues. Some got food from their home gardens and obtained other assistance from their families. It was an opportunity to be among people who can provide support. Therefore, they were contented to be there and did not envisage going anywhere else. Moreover, for some participants, the rural area where they worked was the ultimate destination in which they had intended to work in their career. They had never thought of working in urban areas. Several other participants (MA1-2, NA1, NA4, NA5, NA7), emphasised their desire to be near home to serve their people as the main reason for staying in a rural area. The term “my people” extended beyond the immediate family to the extended family, local community and tribesmen and expressed a desire to work in a familiar environment. Some participants considered that being near their home made it possible for them to stay in the rural area, compared to other health workers who did not originate from such remote areas:
“It is, actually, because I am a son-of-the-soil\textsuperscript{30}, because other colleagues from other parts of Uganda found it a very difficult area to work. Fellow doctors find it difficult. But for me, that’s one, because I am from here”. (MA1, Medical Officer, Hospital I)

And:

“….after qualifying, I had not stayed with my mum! ….Because I had stayed away for long! …. even up to now, sometimes I get food from home. If I am stuck with finance or with food, maybe salary has delayed, I just call. They send me some food, sometimes money! (laughs) (NA19, Registered Nurse, Hospital G)

Several other participants mentioned that they were retained in rural areas due to domestic and social challenges, some of which had necessitated their going to rural areas in the first place. They included sick relatives, elderly parents, land wrangles in the family and others. Most of this type of reasons related to the fact that the affected participant had a social responsibility in the family or community e.g. as head of a household, which required his/her presence in order to maintain smooth running of the household:

“…..my brother died in [year] leaving me with [number] children. Even his wife died. So, I have the children….. Even me, I had wanted to retire …. but I couldn’t ….. So, it kept me going [to work]”. (NA8, Registered Nurse, Hospital C)

Several participants also reported that they were able to stay long in the rural area because of the sense of comradeship they experienced from the fellow staff and the community. They had adequate entertainment together in social activities as well as being supportive of each other in terms of need. They felt that that type of support was only possible in rural areas. These made the participants feel at home in the rural area and stay. Some even got positions of responsibility in such social

\textsuperscript{30} A colloquial expression meaning “born in the area” (and, therefore, familiar with the environment and people – at home, best-suited and adapted to be in the area).
groups and this added to the respect accorded to them locally and the networks of people they encountered. Therefore, they were happy to be in rural areas:

“…. in cases of any problems... whether in times of happiness or sorrow, they are always there for you, actually, unlike in an urban setting, where some may not even be concerned!” (NA15, Registered Nurse, Hospital L)

And:

“We had many social groups. ... So, at the mosque, I had some responsibility...I joined the Rotary Club ... later on, I became President of the Club. There was also another social group... We used to contribute: somebody is wedding, ... introducing\textsuperscript{31}, ...graduation, .... Those were our groups...You mingled with the community!”

(MA11, Medical Officer, Hospital H)

The decision to leave an organisation or an area is often dependent upon a careful balance of advantages and disadvantages of leaving and staying. Several participants mentioned having developed connections and relationships both at work and also in the community where they live. Therefore, when faced with the decision on whether to leave or not, they would make trade-off considerations between the benefits they are likely to receive in the new place and those they will be leaving in their current job and location. Many participants mentioned that if they were to leave, they would miss intangible benefits like the good relations, friendships, collegiality and peaceful coexistence that they had built that they have had within the Management and with the staff, although some of them also felt that they had little to lose from those specific locations, mainly because of poor collaboration with the community:

“The reception of people from here has been quite good! No intimidation, no harassment! Hospitality is there! Very good cooperation within the administration....” (MA9, Medical Officer, Hospital B)

\textsuperscript{31} A prenuptial ceremony in some Ugandan cultures equivalent to an engagement party
And

“But I can say, the other side, there was the collegiality of the institution, you know, and then of course the influence that we had in the hospital ….. I think those are the things that I would miss”.

(MA12, Medical Officer, Hospital L)

Many participants mentioned that they would miss their personal connections with friends and the community members. Others mentioned missing the rural environment in general. Friendships were mainly based on mutual social support in times of need. The support seems to have brought closeness among the staff and was a major reason for their reluctance to leave their current positions, a kind of glue that bound them together in the rural area and compensated for other deficiencies they might experience in such locations. This theme was recurrent in the responses of many participants, as illustrated by this excerpt:

“Maybe the various friends, having stayed for long, the friends I have made around …. I have not had any problem with them. If you go into a new area, you have to create friendship, get used to the environment……” (MA5, Medical Officer, Hospital G)

In addition to what they would miss at work, participants also mentioned the potential loss of some community benefits, most of which were of a social and intangible nature. Very few participants mentioned tangible off-the-job sacrifice. Many participants, especially the doctors, mentioned that they were well-respected in the communities. The respect had made them feel comfortable and not think of going away. Many of them considered that if they were to go away, they would be missing this respect, to a place where they are not sure of similar respect. In the community, the participants would also miss friendships established with individuals in the community and a general satisfaction with the given community in which they lived. Some participants felt they would miss the opportunity to

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32 Generally, rural hospitals provide health workers with on site accommodation. Therefore, they work and live together as a community, and their links extend from work to their residences. This sense of community is enhanced by the fact that they are often the most educated people and government employees in the rural area.
provide a much-needed service to the community if they left. Some participants exhibited attachment to the local community because they gave an impression that they felt a responsibility or moral obligation to ensure that services are provided to that community, and that they would be reneging on that responsibility if they left:

“I would be sacrificing the way they appreciate the work of a doctor because, you know, we are talking about a place where it is difficult to get doctors. So, they have a feeling that a person who has come to serve here, ....first of all they know that you are qualified but you have also sacrificed or foregone something... So, they give us due respect..... Everywhere you pass “Doctor!”, “doctor!” “doctor!” That one .... really keeps me happy” (MA2, Medical Officer, Hospital I)

And:

“The community! I would miss them in that very many of them have, actually, been coming to this hospital because of me ...... And what are they going to do when I am no longer....? I think that is one other aspect I will miss, that attachment to the community!” (MA3, Medical Officer, Hospital L)

8.2.3 Effect of policy, legal and administrative reasons on retention

Several participants cited policy, legal and administrative reasons for their retention. Most participants who had received scholarships for further studies were obliged to return and offer services in facilities owned by the sponsors by bonding agreements. Therefore, they stayed for the entire duration of the bonding period, which was up to three years for several participants, and some even exceeded it. Others simply decided to go to rural areas of their own volition, irrespective of previous support or promise of support. Although some of those participants would have left the rural areas earlier, their stay was prolonged by pressure from their family members urging them to stay.
“Honestly speaking, initially, when things would become very tough, sometimes I was tempted to go….. But fortunately, my wife resisted” (MA1, Medical Officer, Hospital I).

For several participants from private facilities, the main policy that retained them in rural areas was bonding following sponsorship for further studies, because they were required to give a return of service to the sponsoring organisations. The bonding policies vary from institution to institution. For some, the bonding period depends on the duration of the course. For others, it depends on the level of the course and, for yet others, it depends on the amount actually spent on the employee. Therefore, the rural retention of some participants could be explained by their being there to serve their bonding period. However, several of them decided to stay long after their bonding period expired because they were already used to the circumstances and some of them did not want the bother of looking for new jobs. Whereas the government never used to bond its staff, in the past, it has now started bonding those who have been sponsored for further studies. With decentralisation, the given that the staff are employees of the districts, they sign their bonding agreements with the districts, even though the money is usually paid directly to the training institution by the central level at the Ministry of Health:

“No, we only signed when they took me for Registration. I signed a contract that when I come back, I will serve for three years… I was bonded. The three years are already over”. (NA8, Registered Nurse, Hospital C)

And:

“I have a contract because the hospital paid for me and they bonded me, by the way, for so many years! There is no one in Uganda who was bonded like that! ...... So, I can’t run away before I complete that contract”. (MA4, Medical Officer, Hospital L)

Several participants from government facilities attributed their long stay to government policies and laws, especially, those that favoured rural practice.
However, whereas some of them may be acknowledged as formal policies to take health workers to rural areas,, others are just considered to have been informal practices, some with other objectives but which led to health workers going to rural areas as unintended consequences. Other would-be policies were just verbal comments or promises and cannot be traced in writing. Therefore, they may be considered to have been opinions of those who mentioned them. For example, some participants reported that they went to the rural area in response to promises of priority consideration when it comes to allocation of scholarships for further studies. This was a verbal promise from a high-level government official, which was not implemented. Others went to the rural areas after being banished from urban areas by the Ministry of Health, following industrial action. This was also a verbal order but implemented because it came for a high level official.

Several participants also mentioned that they had stayed in rural areas just because they are unable to transfer their services to urban districts or other rural districts of their choice because of the Local Governments Act (2007) which instituted decentralisation. This has become a constraint for inter-district movements and stabilised the staffing picture. Staff can only move within the same district. However, several participants felt trapped in the rural areas by this law because they would have wanted to be elsewhere. A number of participants went to the rural areas in order to get onto the payroll, thinking they could come out easily and transfer to wherever else they wanted, but realised too late that this was not possible. Others were not aware of the processes that led to the enactment of the law due to remoteness and isolation. Therefore, they were caught unawares by the law and decided to stay. They are in rural areas simply because they are trapped there:

“By that time, the Local Government Act was being enacted. I think they had actually passed the bill and it was waiting for the President’s signature. In the process, it was signed and automatically (laughs) I had to be in [district] unless I went out to look for a job. (laughs) .....So, I just stayed”. (MA6, Medical Officer, Hospital D)
And:

“I think what has made me stay longer is because I am in a local government! If I was [to be] in central government I think I would have left [district] some time ago! ...I tried to move, but they told me that when you are in the local government, it takes time” (NA17, Registered Nurse, Hospital G)

Some participants had stayed for a long time in the rural area due to government recruitment freezes. Due to limited funds, the government makes recruitments at unpredictable intervals, coinciding with the availability of funds, typically, 3 – 5 years. In the inter-recruitment period, the number of vacancies in government facilities increases due to a high turnover, especially in the rural areas, while the number of unemployed graduates also increases. Thus, some qualified health workers opt to volunteer in rural areas in order to maintain their knowledge and skills, while waiting for official recruitment. They reach an understanding with hospital and district managers that they will be given priority during recruitment. This leads to retention because, by the time recruitment is permitted, usually, several years have passed, and the employee is already getting integrated into the workplace.

Other participants went to rural areas and worked with private facilities because the government had frozen recruitment due to inadequate funds and they could not afford to wait until the government’s recruitment freeze was lifted. Some other policies cited for influencing health worker retention in rural areas include deployment on the basis of ethnic origin (practised but not as a written policy) and government secondment to private facilities (practised but not as a written policy). Whereas these policies mostly served as initial reasons for going to the rural areas, for some of such participants, they set the stage for rural retention because, once in the rural area, other factors came into play that made it possible for them to stay in the rural areas. Policies to increasing health workers in rural areas which were accompanied (initially) by verbal promises of incentives include: “rural allowances” or “hardship allowance”, sponsorship for further studies and secondment. It is only
recent when the government wrote a formal policy for hardship allowance. Other policies do not have a documentary back-up. Some participants reported that their ability to stay in rural areas was because, although working in the private hospitals, they were seconded by the government and assured of their benefits:

“…..I am on government secondment. So, I still have that feeling that if the situation is difficult, I can go back to the employer and say that: “deploy me elsewhere”…..That one also has helped to keep me around ..”. (MA2, Medical Officer, Hospital I)

8.2.4 Effect of satisfaction and compromise with a rural choice on retention

Several participants mentioned that they were retained either because they were satisfied with their rural choices or they had brought themselves to accept the rural circumstances because they did not have alternatives. Some other participants reported that they stayed in the rural areas because they had reached a point in their educational attainment where they did not want to add further qualifications. This was common among doctors who had already completed their Masters degrees. Some went to the rural areas after completing postgraduate studies while others completed them while already working in the rural areas. Therefore, a postgraduate qualification was a stabilising factor, especially if it was attained before commencing rural practice. Among the nurses, only twelve (12/33) had completed the Registration course before going to work in rural areas. The remainder undertook the Registration course while working in the rural area. Almost all the newer nurses who had served in the rural area for 3 - 10 years did their Registration course before going to the rural area. Among the doctors, 14/17 already had postgraduate degrees (to Masters degree) at the time of the study. Three had completed their specialisation before going to the rural areas while 11 had acquired theirs while already working in the rural area. Only three doctors in the study had not yet undertaken postgraduate studies. Postgraduate qualification partly explained the stability and retention of those study participants. Others were satisfied with other lower levels of qualifications, such as a diploma or a Bachelors degree and did not have an urgent need to leave the rural areas:
“But another motivation is that I was lucky to have done a postgraduate course before I came. Had I not done a postgraduate course, I would have definitely been tempted also to go for further studies...... and having no urgent need to do another course. That motivated me”. (MA1, Medical Officer, Hospital I)

Participants also preferred to stay in rural areas for environmental and health concerns (air pollution, noise etc). They believed that such problems were more prevalent in urban areas than rural areas. Therefore, they were satisfied to be in rural areas for their health and safety:

“We are relatively safe. You know most of those bad, bad infections are in town there where you have so many mixtures of patients. Here, we tend to get patients who don’t have, maybe, resistance and who have not been exposed to those strong antibiotics”. (MB1, Medical Officer, Hospital C)

Although many participants were satisfied with their choice to stay in rural areas as seen already, there were other health workers who had stayed against their wish. They were dissatisfied with having to stay in the rural areas but stayed, nevertheless, due to reasons they considered to be beyond their control. In a way, such participants felt “trapped” or “stuck” in the rural areas. Importantly, though, most of them were dissatisfied with the location, but not health care work. Several participants in senior positions of responsibility reported that they had remained in rural areas for a long time because they did not have anybody to replace them or even relieve them temporarily. In two such cases, they had been the only doctors available in the hospital for long and felt duty-bound to stay and serve the community, even if this meant them missing personal opportunities elsewhere. Even when they got a few more health workers, the said participants reported that they were the most senior and holding positions of responsibility. They felt that they were accountable for whatever happened in their units and, therefore, they could not leave until a replacement came.
Several participants reported that the main reason why they were able to stay for long in rural areas was their ability to adjust their lifestyle and expectations to fit in the local, rural circumstances. Self-adjustments involved lowering their expectations in life and the standards of living they were willing to tolerate. They reported having had to accept to lower their lifetime expectations in terms of financial, career and social achievements for themselves and their families. They accepted to live in poor houses in need of renovation, to take their children to poor schools, drive poor or no cars and to be cut out of the social circles to which they would have wished to belong, and to accept to belong to those of a lower level. Therefore, there was a strong element of sacrifice for such participants to work in rural areas. They even selected income-generation activities matching with life in the local community. For example, health professionals had to engage in commercial agriculture in order to generate supplementary income, instead of setting up professional services like clinics or hospitals. Another self-adjustment for some participants was to accept to work in organisations with beliefs and values different from theirs and to live under the conditions imposed by those organisations. This was common in faith-based facilities, where participants belonging to different faiths had to accept to go by the values and standards of the foundation body. The self-adjustments were difficult and at times painful:

“Even economically, I had to adjust. I had to adjust! My income here, actually....for example if I was in Kampala, I think I would be earning more and I would have put up a better clinic. ....I have an older vehicle. I would be driving a newer one like some of my colleagues do.....Those are the adjustments!” (MA7, Medical Officer, Hospital J)

And:

“Of, course I was a little bit edgy about it because I am not a [faith] myself. I had a feeling that probably this hospital should be for.....(laughs). The [owner] said: “No! That is not a problem as long as you recognise the values of the [faith] and don’t tamper with them, we
have no objection”. And so, I signed the contract…..” (MA3, Medical Officer, Hospital L)

Several participants reported that they were able to stay in the rural areas because they consider that serving in such a location is “not a problem”. This phrase meant that either they could tolerate the challenges they would meet there or that they had developed capacity to solve them. The reasons why they considered the rural area to be “not a problem” included having been raised in rural areas, having developed survival skills for rural areas, coping mechanisms against rural challenges, a feeling that they naturally belonged to rural areas, having obtained a *locum tenens* relief, having better job security in rural areas, ease of access to urban areas from that location, and a feeling that urban health workers were not any better off, among others. This positive attitude to the rural areas was a major underlying factor for most participants in the study.

Many participants cited their rural origin and rural upbringing as reasons for their ability to be retained in rural areas for long. Rural upbringing made rural areas a very familiar situation such that nothing in the rural area was new or shocking to them, because they had grown up seeing similar or worse things. The rural setting was, therefore, quite familiar to them. Some even said that the places where they were currently working were more urban and developed than their own home areas. Therefore, such participants felt that they were in more developed places and were satisfied to stay in such locations. These sentiments were expressed by participants NA17, NB2, NBS, and NB9 and MA8:

“…. having that exposure to a rural area, I did not, I think, find a lot of difficulties in working in this place. ... I had known... how to deal with situations in a rural area where there is no ....electricity, and so forth. When I came to such a place where there was electricity, I think I saw there was a difference”. (MA8, Medical Officer, Hospital F)

One participant reported to have stayed in a rural area because he got relief by a *locum tenens* which enabled him to study a post-graduate course while still employed by the private hospital where he worked. This was a novel approach in
Uganda. The participant wanted to go for further studies but needed somebody to replace him. So, with the approval of the hospital management, he hired somebody using his salary, which enabled him to spare some funds for himself, too. Around the time he finished his course, a vacancy had fallen in the hospital and the doctor on *locum tenens* was also recruited officially, because he was already part of the hospital system. Thus, there were no recruitment costs for the hospital and the new person was already acquainted with the hospital’s organisational culture. Thus, he was able to continue working without interruption.

The concept of a *locum tenens* was generally not well understood by most of the other participants in this study because it has not been applied much in Uganda. However, given the frequent freezes on recruitment, it is one approach that can be put to very good use to relieve the workload pressure of in-post health workers. Even internationally, its application varies from place to place, and a suitable model can be developed for Uganda or for specific hospitals. Recruiting a doctor already on *locum tenens* was far cheaper and faster for the hospital because it guaranteed continuity of services, and there was no need for a fresh recruitment or orientation process. Moreover, it allowed the overall knowledge capacity of the institution to increase when the trained participant came back from the course. Both health workers involved later served the hospital for a long time:

“I negotiated with Management....to employ my own doctor in my place for that one year. .....He will do all the work that I would do but I will always come back over the weekend and I do calls! .... So this guy would be in my house, ...out of my salary, I would give him something like 50% of my salary and he would be comfortable with it” (MA12, Medical Officer, Hospital L)

Quite a number of participants, mainly those above 50 years of age, decided to stay in the rural areas and in the same station for long. They were not keen on moving to new workplaces because they were nearing retirement\(^{33}\). Some of them did not bother to look for new jobs elsewhere because they thought that, at their age,

\(^{33}\) Retirement age for government employees in Uganda is 60 years.
nobody could recruit them anymore. Therefore, they had opted to remain in the rural area. From the interviews, both inertia to move to any other area and a sense of resignation were detectable in most of such participants nearing retirement:

“Now, as I said, I am almost nearing my time of retirement, I still have some five years. I feel I should learn to be comfortable in this place because, now, where can I love to go? I think I must learn to be in a place where I plan to spend the rest of my time!” (NA18, Registered Nurse, Hospital G)

And:

“As you grow older, at times you realise that now, even if I go somewhere, like now at my age [>50], you cannot be taken up by the government. You decide to stay somewhere you can ...” (NA14, Registered Nurse, Hospital L)

Several participants reported that they failed to move from rural areas because they lacked opportunities elsewhere, mainly due to lack of exposure, lack of information, marginalisation, and inadequate qualifications. Although most parts of the country currently have reasonably good communication by road, radio, telephone, internet and can receive newspapers, that was not the case several years ago when some participants went to the rural areas. Some of them were, by then, isolated from modernity due to poor communication. Several participants reported that their prolonged stay in the rural areas was due to lack of information. Some claimed that because of their rural origin, they did not know how and where to look for information regarding better opportunities because they lacked exposure to places beyond their home areas. They claimed that rural upbringing, limited their ambition and judgement regarding opportunities outside their communities:

“...we didn’t have access. ... Did I know where Entebbe was and how to apply and get a government job? ... So, I remained here! Now when I looked at it, I said: “My years have gone. Why can’t I remain
here and I serve, and when my time comes, I go...?” That is how I remained behind!” (NA8, Registered Nurse, Hospital C)

And:

“The disadvantage I saw in the rural areas, you cannot know what is going on in the world! (claps in exclamation) ..... You cannot admire! (NA13, Registered Nurse, Hospital L)

Others claimed that their retention was due to marginalisation by their local authorities either at the hospital or at the district, often for ethnic reasons, especially where the participant belonged to a minority tribe in the district. Marginalisation denied them chances to advance their career so that they could be marketable beyond the area. Alongside marginalisation, others claimed that there was corruption in the process of allocation of opportunities. They had been retained because they could not afford the required bribes:

“Because of all those years which I have worked, I am supposed to have been promoted, but because of corruption, nothing has been done! I have not even been promoted!...I tried several times until I gave up!...That corruption due to tribalism! ...”. (NA21, Registered Nurse, Hospital D)

Several participants said that they stayed in rural areas because they had not had opportunities elsewhere or because they perceived that it would be difficult to get a new job. Being the breadwinners for their families, they did not want to risk uncertainty. Despite the belief that doctors and Registered Nurses are generally marketable in urban areas and even internationally, some of the participants said that they believed that they could not get a job anywhere else. Therefore, they were cautious about leaving their current jobs due to the uncertainty of getting new jobs. Their main reason was that they believed that they lacked the necessary qualifications. They doubted their ability to get new jobs. Therefore, they stayed in their current locations, consolidating the opportunity they had received:
“I think it is the job because, the family, I can shift it to Kampala, but getting a secured job, with enough security, it is not so simple. So the main thing is the job!” (NB6, Registered Nurse, Hospital D)

And:

“You see, you persist but you also have some social obligations. It is not very easy to find work, yet you have commitments. You have people at school. You have to spend. You have to look around and get a trade-off”. (MA6, Medical Officer, Hospital D)

Due to the uncertainty of getting jobs, some participants even considered bribing the recruiters but thought the better of it because of further uncertainty. This was mainly considered by the older employees of faith-based organisations who had hoped to join the government due to job security, better salary and better retirement social security benefits:

“I am already in the fifties. Now getting a government job is also very hard. I may push in my two million [Shillings as a bribe] and I might not even get the job. Then I said: “Let me remain in [hospital] until I retire”. I am almost on my exit” (NA8, Registered Nurse, Hospital C)

Themes observed in this section and relation to job embeddedness

This chapter has discussed the factors leading to retention and what participants felt they would sacrifice upon leaving the rural area. The factors leading to retention are a complex mesh. In Fig. 8.1, I have tried to demonstrate them in rational categories while minimising the inter-category links in order to keep the schema readable. They can be grouped into two broad themes i.e. satisfaction and achievement, and adjustment and compromise. “Satisfaction and achievement” covers the factors that include willing and deliberate choice of a rural workplace due to personal interests or a common understanding e.g. serving a bonding period. “Adaptation and compromise” covers those factors that lead to retention because the health worker was compelled to stay, such as inability to transfer, or adapting to the rural circumstances due to lack of alternatives.
**Fig. 8.1 Factors responsible for retention in a rural area**

- **Professional**: practice, outcomes, love of patients, role model, saw need, conditions, career, job security, confidence, position, management attitude
- **Economic**: incentives, investments, pay, prospects for side income
- **Social**: home, my people, familiar, similar, camaraderie, married local
- **Return of service**: gratitude, professional image
- **No problem**: coping, rural origin, village girl, vocation, locum tenens, security, stability, willing to wait, not too remote, near retirement, done with studies, do good, peaceful, equal to others, eventually liked it,
- **Adaptation**: financial, social, career, religion
- **No respite**: no relief, community bond,
- **No information**: isolation, marginalization
- **No chance**: limited qualifications, hard to get a new job
- **Policies**: pro-rural, bonding, sponsorship
- **Laws**: decentralisation
- **Domestic**: sickness, wrangles, responsibility

**Retention in a rural area**

- **Satisfaction & achievement**
  - Interests
  - Choice
  - Not a problem
  - Adaptation
  - Failure to get replacement
  - No opportunities
  - Policies
  - Laws
  - Problems

- **Adaptation & compromise**

There are many links between the different categories. The process of retention was not simple and linear. It was iterative at multiple stages, and thus complex. Whereas the figure serves to identify the key stages of the complex process, it is not exhaustive of the possible or actual links between the steps. I have made it simple, in order to maintain its readability.

8.3 Conclusion
This chapter has presented the factors responsible for the retention of the studied health workers in rural areas of Uganda. The factors can be explained by two themes i.e. satisfaction or adaptation. The factors under “satisfaction” show that the participants remained in the rural areas because they were satisfied with their choice of rural practice. For some, it was their ultimate desire to work and stay in the rural areas. For others, the rural area provided an ideal place where they could practice professionally, have a wide scope of practice and feel comfortable that they did not have to charge patients money illegally just to make ends meet. Their “professional conscience” [155] was satisfied. For others, the rural area was where they had their key interests such as relatives, friends, economic investments and their origins. Therefore, they felt at home and, moreover, with a rural upbringing,
many of them were already well-adapted to rural circumstances. Some were even happy that the rural area where they worked was more urbanized than their own home villages. Therefore, many participants who were satisfied with their rural stay felt that staying in a rural area was a major achievement for them.

However, there are others who were not satisfied with their rural stay but had stayed, nevertheless, due to obligations at work, at home or in the community. Factors under “adaptation” include the reasons of those who stayed because they adapted to the rural situation by revising their expectations on a number of issues downwards. They lowered their financial expectations, and even the quality of life they had planned to live. They had made a big sacrifice to stay in the rural area and compromised their earlier plans either because they felt obliged to do so or because they had no alternative. The next chapter discusses the key findings from the entire study and relates them to the research questions and objectives.
9 DISCUSSION AND CONCLUSION

9.1 Introduction

The main purpose of this PhD research was to understand the factors that lead some qualified health workers to be retained in rural and remote areas of a developing country while most of their contemporaries prefer urban areas and others migrate to developed countries. Rural residents are entitled to access the best quality of health care that the country can afford like their urban counterparts. However, rural areas are deprived of qualified health workers often due to refusal by health workers to go to rural areas which lack social amenities, are hard to reach and lack adequate technical facilities for satisfactory professional practice.

Internationally-recommended interventions to redress the rural-urban imbalance in availability of health workers are often unsustainable for developing countries. However, a few qualified health workers are observed to work in rural areas for long without specific interventions, and it is that observation that prompted this study. This PhD research also sought to understand the role, if any, of job embeddedness in health workers’ rural retention. Job embeddedness is consistently predictive of employee turnover intentions and turnover behaviour in mostly urban jobs in sectors other than health care [29-32, 517, 522, 529, 549, 558, 571, 718]. Although many studies have been conducted on job embeddedness, only a few have targeted health workers [31, 553, 719], none had targeted rural health workers in a developing country, and all were purely quantitative, until this PhD research.

Originated by Mitchell et al. in 2001 [29], job embeddedness is a composite construct that explains the multiple reasons that make employees decide not to leave their jobs, even when they have opportunity to do so. The reasons form a web of interests which an employee becomes unwilling to sacrifice by leaving the job [29, 517]. The interests may be in any (or both) of two domains i.e. on the job or off the job. The construct envisages a 3 x 2 matrix (see Table 4.1, page 93) indicating the different dimensions of an employee’s embeddedness. The employee may develop links at the workplace (Links-Organisation) through friendships and other shared interests or in the community (Links-Community), through social links e.g.
marriage. An employee may also fit in an organisation due to the similarity of his/her values and goals with those of the organisation (Fit-Organisation). He/she may also fit in the community because his/her interests coincide well with those of the community (Fit-Community). This brings attachment and when confronted with a possibility of leaving, he/she considers the benefits and opportunities that he/she will miss by leaving the job. They constitute a sacrifice to be made either on the job (Sacrifice-Organisation) or in the community (Sacrifice-Community). An employee with strong, close and multiple ties is deeply embedded and less likely to leave than one with less or weaker ties.

This PhD research used a mixed-methods case study to investigate the issue of rural retention of qualified health workers in a developing country. In-depth qualitative interviews were supplemented with a quantitative survey of the degree of job embeddedness. The preceding three chapters presented the findings of the study. This chapter discusses these and other key findings in comparison to earlier studies and highlights those which concur with existent knowledge, those which contradict it and new contributions altogether. I consider them and highlight their relevance to retention in rural and remote areas in Uganda, although some of them may also be relevant for other settings. I compare the key findings of this PhD with those of previous studies in Table 0.9 (see Appendix 11, page 341). The chapter also highlights the contribution of this PhD to knowledge and policy on rural retention in form of some new findings adding to existing knowledge and methodological contribution to health policy research. It concludes by highlighting some areas for future research and some lessons learnt about retention in rural areas.

9.2 Does job embeddedness lead to retention?
This PhD research found that retention in the rural area often came as a prolongation of the initial reasons that took the participant to the rural area. Most participants initially went to the rural area to address their needs, such as attending to their investments and being near their families and homes. Once in the rural area, they continued working while also attending to their needs. For most of them, there was never a critical juncture that required them to question why they were in the rural area or to consider leaving. They found themselves staying, hence the
quotation on the title of this PhD thesis. However, a deeper analysis of their reasons for going to work in the rural areas confirms the importance of off-the-job fit, off-the-job links and off-the-job sacrifice. This would be understandable for people working in their home area. As people develop links in the community and fit within community structures, then it becomes harder for them to countenance leaving the place. However, upon analysing quantitative findings on job embeddedness by domain, the participants had their strongest scores on, especially, on-the-job fit (Fit-Organisation) (see Table 7.6, page 214). This suggests that, as a group, they have strong similarity of values and goals with their employers. This tension between the two sets of findings remains unexplained. However, it may be that the qualitative interview is not able to clearly distinguish between on-the-job and off-the-job fit all the time. This indicates need for further research.

Nevertheless, strong Fit-Organisation is important for policy-makers and managers because it is a domain that can be influenced by managers through relatively simple activities within their scope. These include focused training on values, mission, vision and goals of the organisation, socialisation, mentoring, and supervision. It is a domain in which the actions that will most impress the values of the organisation upon the health workers actually take place within the hospital and are under the local managers’ control. Moreover, most of the necessary actions are not very costly but they require good planning, implementation, commitment and patience. Studies have shown that when employees join new organisations, they have their own objectives and value systems [519]. Some of these may be at odds with those of the organisation. Therefore, there is need to engage with them in order to narrow down the gaps and to design activities that increase employees’ fit. This is normally done as part of the organisational socialisation process [556]. Overall, the fact that “Fit-Organisation” posts stronger scores is in agreement with previous research which also shows that on-the-job embeddedness tends to be stronger for most employees [521, 556-558].

The fact that Fit-Community is also very strong is probably due to the fact that most of the participants work near their homes of origin and are well-integrated therein.
This also serves to suggest that they will not be leaving the hospitals soon, and it is indeed confirmed by the quantised findings from the qualitative study, which show that only 20% of the participants intended to leave in a year. This also suggests that for rural hospitals, it serves them well to have a large proportion of their staff originating from the areas surrounding the hospital, because they do not feel that they have to go away at some time. Holtom and O’Neill [31] also recommended that nurse recruitment should focus on labour markets surrounding the health facilities as a way to have employees with good Fit-Community. In some countries, this may lead to opposition because of the need for regional balancing. However, since not all areas with hospitals have adequate numbers of qualified health workers capable of taking up all the positions in the hospital, and since not all health workers from an area want to work in their home area, there will always be adequate room for people from outside that area, in order to enhance regional balancing.

This finding also suggests the need to address the regional balance in the distribution of health training institutions and the numbers of students admitted for health care courses, to ensure that all regions have significant local capacity to meet the local needs. Further support for this suggestion is shown by the fact that being near home and serving a return-of-service bond were protective against intentions of leaving the rural area (see Table 7.8, page 220). Most of the local staff would not be going away, especially if they received scholarships, because they would also serve return of service bonds and stay for long. The current practice in some countries is to train whoever is interested and qualifies, non-selectively, and to recruit whoever qualifies and applies wherever they wish to be, irrespective of their area of origin. This was probably responsible for the observed long-serving staff with low degrees of job embeddedness. In Uganda, one small project started recruiting local students destined to work in one deprived region only recently [720].

Given the long recruitment freezes, there are usually many unemployed health graduates by the time recruitment is permitted. They exceed the available slots and this brings about competition. Whereas competition may increase the chances of
getting the very good ones, many of them are just looking for a chance to get a job, with no commitment to stay in that area or perform. This was exemplified by some participants in this study who wanted to get on the payroll and go for further studies. They knew that the only way to get onto the government’s payroll was to go to rural areas. Therefore, the practice of open recruitment is likely to attract “the wrong type” of health workers to rural areas. Health care professions have a strong vocational element but if they are subjected to market forces, the risk of attracting “the wrong type” of people, motivated by other reasons and not the vocational call to serve patients, increases e.g. search for a job, higher salary etc. Heyes has explained the concept of the “wrong sort” of health worker as one of the perverse effects of high salaries [721]. Leonard et al. [722] have also affirmed the findings, arguing that high financial incentives can “crowd out” intrinsically motivated people from becoming health workers. Given high unemployment rates, liberal recruitment for rural areas is also likely to attract that type of candidates to the rural area. Although this study did not look at performance, the performance of individuals dissatisfied with their location is likely to be less than optimal. This is an issue that needs to be studied further.

The finding of a strong measure of Fit-Community together with long retention in both qualitative and quantitative findings suggests that organisations should endeavour to encourage their staff to get involved in community activities. Holtom and O’Neill recommended similar actions to improve the retention of nurses [31]. Once hospital staff gets engaged in community activities, they develop new local “constituencies” aside from their job, some of which become even more important for their stay in the rural area than their jobs. Yet, they know that in order to liaise with those constituencies, they have to stay in their jobs. Therefore, their stay on the jobs becomes of importance to them too. Development of such “constituent attachments” has been observed to sustain retention even without much further organisational input [540].
9.3 Is job embeddedness different from retention?

In this PhD research, the qualitative findings showed that most participants were well-embedded in their jobs, with strong links in the community. Several participants were married in the local communities and had investments that were instrumental in keeping them in the rural area. It was apparent that the longer they had stayed in the rural area, the more investments and interests they had and the less likely they were to leave the rural area. This was corroborated by quantitative findings which showed that the participants’ overall degree of job embeddedness was positively correlated with their duration of retention. This would suggest that job embeddedness could be a form of retention. However, evidence to the contrary is that some participants with a short duration of rural service had higher degrees of job embeddedness than some with longer durations of retention. This suggests that the two concepts are different, even if they may be correlated.

However, this study was unable to tell the temporal relationship between job embeddedness and retention due to its cross-sectional design. This would require a longitudinal study, which was not possible due to limited resources. That aside, it is clear that, on average, long-serving participants were also more embedded than new staff, suggesting that the longer one stays, the more links he/she develops and the closer and stronger the links become, thus further increasing the chances of even longer retention. This is in agreement with the postulates of Mitchell et al. [29] who reported the number and closeness of the links to be the basis of the job embeddedness construct. However, Zhang et al. [564] later argued for the need to consider the strength of the links rather than their number because even few strong links can lead to retention. In this study, this latter position was exemplified by several participants who had, maybe, one sick parent and no other interests in the rural area, but they stayed just because of the strength of that link. Therefore, for recruitment for rural areas, it might also be good to find out about the strength of candidates’ links in the rural areas.

Using sub-analysis, I was able to compare individuals’ degrees of job embeddedness by background characteristics and other aspects such as employer and cadre.
Whereas the average degree of job embeddedness of all the participants was found to be low, some participants had very high degrees while others had very low degrees of job embeddedness. High degrees of embeddedness were mainly found in the longest serving staff (rural retention of 25 years or more) because they had settled in the rural areas fully and were happy with the location. The lowest degree of embeddedness were among some newer staff who went to work in rural areas out of obedience but not choice. This suggests that, for good rural retention, the employee should be satisfied with the choice. One way to find this out is to conduct regular staff satisfaction surveys. The PNFP facilities involved in the study (under the UCMB) conduct regular Patient Satisfaction Surveys [723]. However, there are no reports that they have done Staff Satisfaction Surveys.

In addition, some newer staff had higher degrees of job embeddedness than some longer-serving staff. This would suggest discontent with the location or the job on the part of the longer-serving staff and would indicate a higher likelihood of turnover. It could also predict a higher likelihood of long-term retention of the newer staff. Therefore, the job embeddedness construct could be used to predict long-term retention and likelihood of turnover, which would be a useful addition to the application of the construct. This ability to distinguish between well-embedded and poorly-embedded individuals could help managers in deciding, for example, in which employee to invest limited resources, let us say of a few scholarship slots. Therefore, this makes the construct even more applicable beyond prediction of turnover. This sub-analysis is, in my opinion, a methodological contribution to the application of the construct in future research. However, in this study, given that the sample size was small, the overall results of the quantitative component (and, especially, those of sub-analyses whose numbers get very small) may not be projected beyond the study sample. They are only valid for the study sample. That aside, the sub-analysis pointed to some extra information that was unknown.

In previous studies, job embeddedness was found to be a reliable predictor of intention to leave/quit a job. It was consistently negatively and significantly correlated with turnover intention and actual turnover [29, 521-522, 539, 549, 571, 586], implying that those who were more embedded were less likely to have
turnover intentions or to leave their jobs within a given period. In this study, too, the relationship between job embeddedness and intention to leave was in the right direction. This would suggest that job embeddedness is negatively correlated with intention to leave the rural job, but it is not statistically significant, probably due to the small sample size used for the quantitative study. A much larger study would probably identify the true effect.

9.4 Social reasons for retention

From the qualitative findings, many participants were retained in rural areas because of social reasons. Specifically, many participants demonstrated altruism by caring for others at a big opportunity cost to themselves. Many, arguably, missed opportunities in urban areas and abroad, just to be in the rural areas. They had initially gone to rural areas for altruistic reasons, which eventually led to their prolonged stay. Several participants had stayed because they felt it their responsibility not to abandon the community they had served, without recruiting a replacement health worker. Others, especially the newer staff, felt a responsibility to first serve the rural community before going to look for better opportunities elsewhere. Most participants stayed in rural areas to serve the community in general and patients in need, and not relatives, due to attachment to the community that they had developed. This was prosocial behaviour. Although some participants planned to work in the rural areas as their preferred destination, many others did not intend to stay for long initially. However, due to bonding with the community or patients in need, they ended up staying for long. Prosocial behaviour led to this type of bonding, observed in both nurses and doctors, in all retention duration sub-categories, and in staff employed by both employer categories.

This finding concurs with what was found by Hancock et al. [641] among physicians in USA who stayed in rural areas for reasons of “community service”. The desire to remain serving a community perceived to be lacking health care is a prosocial behaviour akin to volunteering [575]. Some studies have identified similar prosocial behaviour leading to choice of rural practice. Serra et al. [724] found that Ethiopian nursing students with prosocial behaviour were more likely to choose to work in non-profit organisations, which are mostly located in rural areas. In addition, health
workers with prosocial motivation were paid less than those without it, even by the same non-profit employers. Following up on that study, Serneels et al. [468, 725] found that nursing students who chose to work in rural areas in Rwanda and Ethiopia exhibited two common characteristics: desire to serve the poor and a strong religious affiliation (Seventh Day Adventists in Rwanda, Catholics in Ethiopia).

Therefore, this PhD found further evidence of what was already known about non-profit workers but also unexpectedly found government staff to exhibit prosocial behaviour. Although some studies have suggested that people choose public service due to prosocial motivation [572], and that public service motivation is a form of prosocial motivation [726-727], the general perception about government employees, at least in developing countries, is that they are motivated by different issues, especially given multiple reports of corrupt practices, absenteeism and pilferage [320, 728]. Therefore, the finding of prosocial motives for rural practice even among government workers was unexpected and may concur with the suggestion of Ghatak and Besley [729] that some people are attracted to provision of social services irrespective of employer.

In this PhD research, some participants reported that similarity of values with their organisation was responsible for their choice to work and stay in rural areas for long. Points of value convergence included a desire to serve the poor and other religious values. Elements of religiosity were particularly common among nurses. In a panel study, Lagarde and Blaauw [573] initially found that South African nursing students with prosocial behaviour elected to work in rural areas more than those without them. In a subsequent wave, they found that, indeed, more of the students with prosocial behaviours had gone ahead to choose rural practice after graduation than those without. In a larger study, Smith et al. [575] found nursing students to have much higher levels of prosocial behaviour than students from other professions. Kolstad and Lindvik [572] also reported similar findings among nursing and medical students. Prosocial behaviour leads to organisational commitment and, hence, retention [730]. Therefore, prosocial behaviour is a characteristic associated with rural practice choice and retention. Due to limited resources, developing
countries cannot sustainably rely on extrinsic interventions to provide an adequate supply of health workers. Therefore, prosocial behaviours are characteristics they could use to identify health workers for rural areas, and who can be retained in rural areas.

Using knowledge of candidates’ prosocial behaviour to recruit rural health workers would help such countries escape the high costs associated with extrinsic incentives which, although they may be effective in attracting health workers to rural areas, still lack strong evidence backing their effectiveness at retention to warrant massive expenditure. Moreover, although extrinsic incentives are often reported to be a precondition to rural practice, Besley and Ghatak [731] suggest that individuals are “motivated agents”, pursuing goals because they perceive private intrinsic benefits from them, and extrinsic incentives are not the driving force behind all health workers’ rural practice choice. Apart from having prosocial behaviour as a natural trait, studies show that people can be trained to develop and exhibit prosocial behaviour at any stage in life [732].

The studies in Rwanda and Ethiopia [468, 724] showed that the prosocial behaviour of students was enhanced by exposure to rural communities during camps organised by religious groups [468, 575, 722, 724-725]. Therefore, it is possible to get enough health workers for rural areas by using both training and natural traits. To select practitioners retainable in rural areas, it is best to first identify whether the candidates’ intrinsic motivations can be satisfied in the proposed rural area. If such a match were to be made successfully, then rural retention would increase. It is useful to include tests for prosocial behaviour in the battery of selection tests for candidates for rural areas. Smith et al. [575] have proposed the inclusion of attitudinal tests e.g. World Values Survey and the British Social Attitudes Survey. Unfortunately, due to the low visibility of the existence of rural retention, “rural retainability” is not among the criteria used at the recruitment stage.

For retention to occur, it is not essential that an individual has strong connections in all the dimensions of the 3 x 2 matrix of job embeddedness (see Table 4.1, page 93). Mitchell et al. [29] emphasised that individuals are retained differently and for
different reasons. Therefore, one may have strong connections on the job, while another person’s strongest connections are in the community. However, for those who were retained due to prosocial behaviour, their strong connections could be detected in several aspects of the matrix. For example, prosocial behaviour led to the development of strong on-the-job fit such that some participants refused to abandon their positions of responsibility in search of better opportunities because they had not got a replacement. It also led some participants to get strong off-the-job links by developing bonds and attachment to the communities, to the point of not wanting to leave them unattended. In addition, it was prosocial behaviour that led others to be retained because they had positions of responsibility in local religious groups and social groups, thus showing strong off-the-job links, off-the-job fit and off-the-job sacrifice. The aggregate of these multiple connections on their jobs and in the communities was responsible for the health workers’ retention due to prosocial behaviour.

9.5 Preparation leads to embeddedness and retention

From the qualitative findings, it was observed that health workers’ ability to integrate, become embedded and retained in rural areas was a function of their prior social and technical preparation. This enabled them to fit, adapt and stay in rural practice. They underwent social preparation in their upbringing and technical preparation during medical or nurse training. Social preparation made the participants adaptable to difficult circumstances in the rural area, to new cultures and to living in cosmopolitan environments. It gave them emotional intelligence and the cultural competence to deal with complex social milieu. Social adaptability is essential for health worker retention because the rural environment in developing countries can be challenging. Social training increased, especially, their off-the-job embeddedness by enabling them to fit in the community and to develop links, which eventually became hard to sacrifice. It is not surprising, therefore, that even in developed countries, it is mainly students of rural origin who accept and manage to remain in rural areas in the longer term [217]. This is because they have already been exposed to and primed for the living conditions of such areas [733].
Rural areas in developing countries often lack basic amenities like good roads, piped water, electricity and other social services. Therefore, it takes strong commitment and prior preparation to fit, adapt and stay in such an environment. Rural placement could also mean adapting to a new culture. Therefore, there is also need for social preparation in order to develop cultural competence. The participants in this study underwent most of this type of preparation, and it served them well, especially those who had to work in conditions of extreme shortage due to poor salary, communicating with very poor patients from different cultures or ethnic groups. This implies that, to retain health workers in rural areas of developing countries, the selection process should also consider their social background. To minimise the high cost due to turnover of poorly-matched health workers posted to places where they will not fit, the candidates should be evaluated appropriately to ensure not only person-job fit, but the entire range of person-environment congruence, especially “person-place” fit.

Therefore, history of exposure to social preparation should be looked for during selection. However, some studies have shown that even urban-origin students (assumed to have no social preparation for rural areas) can be prepared to fit in rural areas through rural clerkship [224, 734-735]. Cutchin [210] also found that retention is a result of a process of “experiential place integration” in which new arrivals attain security, freedom and identity. Therefore, this suggests that, with careful selection, even some urban-born graduates can integrate in the rural area and be retained. This latter observation would offset a potential shortage of health workers with the appropriate disposition for rural retention.

Importantly, these findings suggest that managers need to know the social environment of their organisations very well and to prepare accurate social profiles of their organisations, to give to prospective candidates and new staff in order to facilitate their decision-making as to whether they will fit in the organisation or not. Managers are also able to create an accurate desirable profile of prospective candidates, including prosocial traits and previous social preparation for rural areas, once they know their organisations better. It has been reported that the recruitment time is a moment when the candidate and the organisation put each
other through a two-way “compatibility test” before the employee accepts the job and settles in [519]. For the success of this test, therefore, both parties need to have accurate information about each other, and to provide accurate information to the other. There are reports of either party giving inaccurate self-reports, which wrongly raises the expectations of the other party, only to be shattered when recruitment takes place [736].

Technical preparation was also found to be crucial for rural job embeddedness, especially on-the-job embeddedness. It helped the participants to fit in with the routine of the hospitals intended to achieve the goals of the health sector. Eventually, some of them felt that leaving the rural area would equate to leaving their career altogether. This implied a very high value attached to rural practice, a very high sacrifice they were not prepared to pay. The programmes for technical preparation varied with training institution. Student exposure to rural areas during training is known to improve their attitudes to technical practicalities and even career and practice location choices later [737].

This study found that programmes in which the students selected the locations for their holiday placement produced better satisfaction, higher skills, and self-efficacy in rural practice, leading to eventual better satisfaction with their work in rural areas and long retention, than those organised by the training institutions. This finding was applicable to doctors only, though, because nurse training schools did not have rural clerkship programmes. Rural exposure of students is currently a practice in many health training institutions globally following evidence that it increases rural practice choice and prolongs rural retention [220, 250, 273, 738-739]. Even Ugandan health training institutions have adopted the practice [263-265, 267, 270]. Therefore, the findings of this study conform to those of previous studies. However, there is, as of yet, no local evidence of their effect on the duration of rural practice and that remains an area open to research. In particular, the role of self-efficacy in rural retention of health workers in developing countries needs to be further investigated.
Self-efficacy in rural practice is necessary for health workers to accept to work in conditions that they are sure to be difficult in terms of the social environment and technical challenges. Such a choice requires courage and confidence, and not everybody is willing to make it. According to Bandura, self-efficacy is people’s belief about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives [740] p.2. It is a type of confidence that is situation-specific [741]. Thus, one may be good and confident in one thing but not in something else. Self-efficacy is a component of the Social Cognitive Theory. It suggests that the beliefs that people hold about their capabilities have a strong effect on how they behave. There are several sources of self-efficacy beliefs: performance accomplishments, vicarious experience, social persuasion and physiological and emotional stress. Once attained, self-efficacy leads to choice of options that would have been avoided (in other words, it gives the courage to do so), improved performance, and persistence [742].

In the context of rural practice and retention, self-efficacy leads health workers to be courageous and confident enough to choose rural practice where they will face challenges of a heavy workload, critical decision-making, and actual service delivery over a wide scope of practice, moreover with high community expectations. Self-efficacy leads to retention by increasing employee on-the-job fit. Due to the confidence attained, employees are able to perform better and handle a broader scope of practice, as well as take difficult decisions they would have avoided. This further improves their alignment with organisational goals. Eventually, they get motivated and this further increases the sacrifice they would have to make by leaving the organisation.

While the concept of self-efficacy has been applied widely in health promotion [743] and sports psychology [741], it has not been widely applied in relation to health workers’ feelings of competence to work in rural areas. So far, few studies report about self-efficacy in relation to rural retention [744-748]. Yet, one of the reasons that make people refuse to work in rural areas is a feeling of incompetence to handle rural challenges [260]. In Uganda, for example, a 2005 survey by the Ministry of Health observed that newly qualified doctors did not last long in rural
areas because of a feeling of incompetence to manage emergency surgical cases. They accepted to work in rural lower level facilities without operating theatres but as soon as the theatre became functional, they left for further studies because they lacked confidence in their ability to handle some cases, especially surgical emergencies, and yet community expectations of doctors are high [749]. They lacked self-efficacy for such services. This led to calls for deployment of more senior doctors at lower levels but it was not implemented.

In the present study, it was found that participants who completed rural exposure programmes felt confident to work in rural areas because they had received relevant exposure and skills as students. This study therefore appears to contradict the previous findings. The explanation may be in the difference of the people and the levels of health care surveyed. The Ministry of Health surveyed Health Centre IVs which are usually staffed with more junior doctors compared to those in hospitals, as was the case for this PhD. However, another plausible explanation is that since the holiday placement was done privately on an individual basis, not all students were exposed to it. Therefore, some students graduated without the requisite skills and lacked self-efficacy for rural practice, while those who completed it developed the self-efficacy. Overall, this study affirms the role of self-efficacy as a potential determinant of rural practice choice and retention. However, further research is needed to analyse the mechanisms through which self-efficacy for rural practice and retention develops and the strength of its effect on rural retention.

Some participants in this study reported having a heavy burden due to the important administrative responsibilities they handled, for which they were not trained. The hardest challenges were of a managerial nature, especially those dealing with human resources. No wonder, therefore, that many of those in managerial positions relied on advice and support from informal networks of peers and homologues for support. Studies have reported the importance of raising the confidence of rural health practitioners because of the heavy responsibilities they face. For example, van Dormael et al. [260] attributed increased retention of rural doctors in Mali to self-confidence gained after a training programme in working as a
rural doctor. The findings of this PhD concur with those of van Dormael et al. Curran and Rourke [227] recommended continuous training and access to colleagues for rural doctors in order to build and maintain their competence and confidence, to avoid stress due to the heavy responsibilities involved in rural jobs. Strasser and Neusy [750] highlighted the importance of specific training for rural areas in building confidence and technical ability for rural practice. Other studies that reported increase in confidence after rural exposure include those by White et al. and Young et al., [751-752]. The findings of this PhD concur with the findings and recommendations of these studies, too, about the necessity for specific training for rural practice, and regular exposure to build the confidence of rural health workers.

However, the previous studies do not analyse the competence gains or lack of confidence to manage rural challenges in terms of self-efficacy. Only Minisini et al. [744] have attributed lack of physiotherapists in rural areas to low self-efficacy beliefs in rural practice. They recommended an improvement in the career structure of physiotherapists in order to improve their self-efficacy and rural practice choice. Self-efficacy for rural practice has implications for policies on recruitment for rural areas and policies on training of health workers. Regarding recruitment and retention, the finding means that the recruitment stage is a point at which candidates can be evaluated for self-efficacy for rural practice. It provides a moment to minimise resource wastage occasioned through mismatched recruits. Whereas suitable scales for measuring self-efficacy exist for other behaviours, only one published scale for rural practice exists [744]. However, it is for Allied Health Professionals, whose scope of work is different from those of the two cadres studied in this PhD.

Regarding training policies, although training schools have introduced rural clerkship programmes in their curricula, in order to produce health workers who are appropriately prepared for the context of the country, not many have evaluated their ability to impart self-efficacy on the students. Several recent studies in Uganda [264-265, 753] evaluated the implementation of a rural clerkship programme and graduates’ perception of confidence for rural practice after rural exposure. They found that the graduates felt more confident due to the exposure. However, the
studies did not do full evaluation of self-efficacy. There are no locally-adapted formal tests of self-efficacy for rural practice, similar to the one used by Minisini et al. [744]. Bandura [754] gives useful guidelines on the development of such a test but it has not been used because self-efficacy is a new concept in rural practice and retention. This PhD serves to motivate research into the development of such a scale.

This study also revealed that students learnt more practical skills when left on their own with rural practitioners. Although the approach reportedly used by the unsupervised rural preceptors, of letting students manage patients after a short exposure, yielded good results in terms of self-efficacy for rural practice and rural retention among the participants, it does not have to be the rule, given its legal and safety implications. However, since the evidence base on such interventions is still very limited, it is hard to know for sure whether it is better than a supervised approach. However, countries have tried formal clerkship, compulsory rural practice before licensing, rural residency for postgraduates etc [196, 289, 444]. In addition to self-efficacy approaches, other approaches that have led to increased rural practice intentions are those which increase student bonding with rural communities, such as those reportedly used by the faith-based organisations in Rwanda and Ethiopia [468, 575, 724, 755]. This implies, though, that rural clerkship curricula should be multi-dimensional, focusing on both technical and social aspects of rural practice such as community bonding.

9.6 Managerial practices influence job embeddedness and retention

From the qualitative findings, several participants reported that their attitudes towards their organisations were positively influenced from the outset by the quality of the reception accorded to them when they reported as new staff, thus underlining the importance of good managerial practices. The reception practices which impressed the participants most were: being picked from the training school by a senior hospital official, being provided with means of transport to bring their property and family, being hosted at a party organised in their honour, being given material assistance and receiving practical orientation about hospital and domestic
facilities. This type of reception boosted their self-image among colleagues at school and at work. Participants felt loved, respected and honoured and this led to their psychological bonding with the organisation. Those who received any of these types of treatment eventually served the hospital for a long time (slightly longer average duration than those who were not received in a similar manner, although the difference was not statistically significant) and attributed their long service to feeling loved at the hospital.

Reception is a recognised important component of organisational entry and socialisation (OES), the process by which an employee acquires social knowledge and skills in order to take up his/her role in the organisation [756]. It helps to get new employees quickly operational. Failure to socialise new employees leads them to experience a lot of unmet needs, shocks and surprises. This may lead to inappropriate responses, negative behaviours and even high turnover in a short while [757]. Studies have shown that employee turnover is highest among new employees, largely due to failed socialisation [556]. Socialisation tactics help a new employee to transition from being an outsider, to being a participating and contributing insider [756]. In short, they help the employee to get embedded in the organisation. In this study, socialisation tactics increased the participants’ perception of person-organisation fit and this increased their on-the-job fit and embeddedness.

Qualitative findings showed that most of those who reported to have benefitted from these practices of organisational entry and socialisation were from PNFP hospitals. Quantitative findings also showed that PNFP staff was retained for longer than those in government hospitals and had a higher average degree of job embeddedness than government staff. This finding is particularly surprising because during the in-depth interviews, the participants from government hospitals expressed more satisfaction with their employment terms, than PNFP staff, some of who even wished to join government. This was because government pays better and has better job security and social security than PNFP facilities. Therefore, the government would be expected to have better staff retention than PNFPs. The
explanation for this contradiction is not clear and is an interesting area for further research.

It is possible, for example, that socialisation tactics indeed have a true and direct relationship with the longer duration of retention observed in PNFP facilities than in government facilities, as implied by the participants. Alternatively, it is possible that socialisation practices are just part of a wider set of good managerial practices exercised in PNFP facilities than in government hospitals. Further evidence of this latter possibility arises from the fact that participants reported that PNFP managers regularly organise meetings to explain the hospital vision, mission and values to all staff, unlike in government hospitals. Through seminars, workshops, actions and ubiquitous posters, PNFP staff may be regularly exposed to reminders about the vision, mission and values of their service, especially their stated mission of a preferential option to serve the poor [758]. Each PNFP hospital has its own specific vision, mission, goals and values, which are owned at a local level because the staff participated in their formulation. Therefore, they get to know them well and own them with time. This ownership increases their on-the-job fit and could be responsible for their longer retention. In government hospitals, this is not the case because, for the sake of self-aligning to central government goals, peripheral managers in government hospitals use the same vision and mission statements as the Ministry of Health, which is more remote and impersonal for peripheral actors. Therefore few staff members adhere to them.

Speculatively, therefore, one may also attribute the observed differences in socialisation tactics and retention duration to differences in leadership and management styles and practices. These differences could create the reported differences between government and PNFP staff in similarity between employees’ goals and those of the organisations; satisfaction with the work environment due to good supplies, equipment and supportive supervision. However, it is also possible that differences in intrinsic motivation and other prosocial motivations could have led to self-selection into the different sectors. Some previous studies have shown that employees with prosocial behaviour tend to self-select into non-profit jobs [724] and to accept lower wages because of their other moral gains [468, 724, 759].
This could have been at play in this study too. Nevertheless, comparison of leadership and managerial styles and practices in government and PNFP facilities is an issue that needs to be investigated formally in order to establish and explain the existence of a true difference, if any, and the strength of the effects of different practices and other antecedents of job embeddedness and retention.

This is because it could help managers to identify and adopt the most cost-effective practices that increase retention. After all, high turnover has been reported to be costly and managers would do all it takes to avoid it by having their employees well-embedded. Allen found that of all the key socialisation tactics [756], only investiture-divestiture tactics\textsuperscript{34} increased employee job embeddedness [556]. In Allen’s study, social support for new employees as part of their socialisation made them feel confident in their new roles and tasks. This increased not-only their on-the-job fit but also the on-the-job- links with those who supported them and, eventually, on-the-job sacrifice that they felt they would have to make if they were to leave the organisation. Thus, social support increased their job embeddedness and retention. Therefore, although apparently simple and often taken lightly, the perception of reception activities needs to change. They need to be taken more seriously in order to increase retention. Reception practices such as those mentioned by the participants have important policy and practical significance because they are simple, inexpensive and can be achieved locally. They are affordable even for developing countries and even at lower levels of the health system in rural areas, and even by PNFP facilities with very limited resources.

9.7 Postgraduate education and surgical camps lead to retention

The qualitative findings indicated that the main explanations for rural retention were satisfaction with rural circumstances or, short of that, compromise and adaptation. Many participants felt satisfied that they were in places of their choice.

They had opted to go to rural areas for various reasons and were happy that they had achieved those objectives, such as being able to practise professionally, being near their interests such as family, relatives and investments. Therefore, they felt a sense of achievement and contentment. One key observation was that participants who went to the rural areas after they had attained their satisfactory levels of education were happier to stay for long. Even those who had gone to rural areas without attaining their satisfactory education levels but had attained them while in the rural areas were happier to stay. On the contrary, there were those who had not attained their satisfactory levels and felt they should leave the rural area to pursue further education. The conclusion from this finding is that satisfactory levels of education led to staff stability in rural areas among the participants.

For example, doctors who went when they had already done a post-graduate degree were happier to stay and some had stayed for very long. Those who were facilitated to pursue the postgraduate degree were also happy to be in the rural areas, especially if their hospitals had the equipment, supplies and auxiliary staff necessary for the specialists to practise advanced professional skills. At a policy level, therefore, this finding implies that it is worth considering to post/recruit specialists to rural hospitals. They are stable and not likely to leave for further studies. Moreover, they provide higher quality care and can attract junior doctors who want to be mentored. However, specialists have to be accompanied with adequate investments in equipment, supplies, support staff, suitable accommodation and higher incentives. For example, a surgeon would need auxiliary staff like anaesthetists and theatre nurses, as well as a well-equipped theatre. Nevertheless, they would have a bigger return on investment for the health system.

In general, some participants were happy to be in rural areas because they could practise their professional skills without hindrance or competition than if they were to be in urban areas. Similar findings have been reported in previous studies, with health workers opting for rural areas because there, they have the largesse of a wider scope of practice and latitude in clinical decision-making. Health workers love professional autonomy and many of them opt for circumstances where they can get it and become “specialist generalists” with a wider scope of practice. [114-115, 122,
209, 304, 377-378]. Currently, in Uganda, there are professional restrictions on the scope of practice for some cadres but not for nurses and doctors.

For example, only doctors may do major surgery, unlike in some countries like Tanzania, Burkina Faso, Malawi and Mozambique where even Clinical Officers/Medical Assistants/Assistant Doctors have been allowed to do major surgery [760-762]. Even the scope of practice for nurses is relaxed and they frequently operate above their normal scope of practice due to a shortage of staff.

In the rural hospitals, junior doctors even do major surgery, due to a shortage of specialists, hence the popularity of “surgical camps” which was observed in this study. “Surgical camps” equip junior doctors with skills for advanced surgery and this makes them intrinsically satisfied with being able to exercise the new skills. This seems to have encouraged some of the junior doctors to stay in rural areas. However, the overall effect of “surgical camps” on retention still needs to be investigated further.

9.8 Homeland effect and self-adjustment lead to retention

Qualitative findings revealed that many participants were simply happy to be working from near their homes, because they could attend to private affairs in their free time. This increased their local investments, links and fit, making them very deeply embedded in the local community and less likely to leave. This further affirms the importance of recruiting rural staff from areas near the hospital. Good long-term retention benefits were also observed in Tanzania when they recruited staff from near the hospitals [109]. Many participants were happy to stay and could qualify as “enthusiastic stayers” [763]. The majority did not intend to leave the rural areas, despite the absence of incentives from their employers.

On the contrary there were others who did not feel very contented but who had had to downgrade their expectations and lifestyle on a number of issues for them to be able to settle down in the rural areas. They stayed grudgingly and could be referred to as “reluctant stayers” [763]. They had lowered their financial and social expectations. Those adjustments had made them psychologically acquiesce to stay
in rural areas knowing that it is either not possible or not easy to move out of such areas. These findings are in agreement with previous studies in other areas where health workers are obliged to work in certain locations, by law, especially in Australia, USA and Canada were also noted to be dissatisfied by the mandatory rural practice [188, 351, 356].

9.9 Novel practices uncovered: *locum tenens* and volunteering

The qualitative study revealed some practices used to retain staff that probably exist widely but have not been reported in published literature from developing countries. For example, it identified the use of *locum tenens* which, although widely practised in developed countries, especially Canada, Australia and New Zealand, and probably also in developing countries, has not been widely reported. *Locum tenens* relief provides opportunity for health workers to rest and to be able to attend to other needs such as continuing professional development or attend family functions [764]. Thus, the health workers are able to be retained because they do not miss out on professional activities and social issues. In this study, one participant was enabled to attend a postgraduate course due to a *locum tenens*. In a country like Uganda where the government has recruitment freezes lasting about three years, thus leaving rural health workers under stress while there are unemployed health workers waiting for the lifting of the recruitment freeze, *locum tenens* is a practice that can be effectively used to relieve rural staff. Moreover, as was seen in this study, it can also ease the recruitment costs if the locum health worker is eventually recruited because he/she will be already familiar with the institution. Its prevalence and the different models of *locum tenens* in effect have not been studied, as well as its effect on retention. They could form interesting research issues to address the problem of rural staff retention. The revelation of this practice is another contribution of this study to local knowledge and policy.

In addition, the study identified volunteering practices while waiting for lifting the recruitment freeze. This practice also contributes to retention of staff because they get used to the rural circumstances early and it also reduces the induction period, as well as providing relief to the existing health workers, who are now encouraged to stay. However, it needs to be regulated to avoid being misused to fraudulently
favour or disadvantage other applicants for jobs when the recruitment freeze is
lifted. In addition, it can be fraudulently used to extort money or other favours from
potential volunteers. It also runs the risk of not recruiting the best staff, since the
districts tend to give priority to the existing volunteers.

9.10 Novel incentive practices: hospital land
Although this study focused on non-incentive reasons for retention, it uncovered a
practice that is used as an incentive to retain staff but is not usually reported,
because of little research on staff retention. This is the allocation of hospital land to
staff for cultivation or other economic activities. In several hospitals, unused
hospital land is allocated to staff for agricultural purposes. In another hospital, it is
allocated to staff to set up commercial activities like hair salons, kiosks and
restaurants in non-permanent, removable structures. These keep the staff
motivated because they earn side-income locally from fellow staff, patients, their
attendants and visitors, and the local community. Many participants stayed in rural
areas because of such investment opportunities. Hospital land is an interesting
incentive yet a neglected resource in many countries. In Uganda, for example, one
study [765] showed that many hospital managers do not have titles for hospital
land. They do not know the legal boundaries and cannot use the titles to access
bank loans or develop the land. Much of the hospital land in both private and
government hospitals has been encroached upon by neighbours and even long-
serving health workers. Yet, this study shows that such land can be used as an
incentive to motivate and retain many staff. The advantage with land is that it
remains the property of the hospital, keeps appreciating in value and does not cost
additional recurrent costs.

9.11 Conclusion and take-home message
This chapter has discussed the key findings of the study, their policy implications for
retention of health workers in rural areas and how they relate to some previous
research. This PhD research has shown that, other than extrinsic incentive factors,
health workers also go to and remain in rural areas of developing countries in
pursuit of non-incentive factors, some of which may be intrinsic. Prosocial
behaviour is one such intrinsic factor important in leading them to choose rural
practice and also influencing their retention. Prior social preparation of health workers during their upbringing led to adaptability when they were posted to rural areas. Prior technical preparation through exposure to rural practice during pre-service training led to development of self-efficacy beliefs about rural practice which, in turn, increased the likelihood of choosing rural practice and retention in rural areas. The study has also shown that job embeddedness is mostly correlated with the duration of retention, and hence a good predictor of retention. However, a few health workers with a short rural service have higher degrees of job embeddedness than some long-serving staff, suggesting that job embeddedness does not explain all the observed retention. This suggests that job embeddedness is a partial mediator of rural retention. Finally, it has shown that good managerial practices, like employee socialisation, increase bonding and retention.

I acknowledge the sponsorship for this PhD in Appendix 17 (see page 348) and intend to disseminate the findings through several approaches as shown in Appendix 18 (see page 349).

9.12 Key contributions of this PhD research

This PhD makes several contributions to the theory of health worker retention in general, knowledge about rural health worker retention policy in Uganda, and about health worker retention research methodology. The key contributions are:

A: Theoretical contributions: The theoretical contributions of this PhD include the identification of some factors important in the retention of qualified health workers in rural areas, notably, the importance of reception of new staff in psychological bonding. It also identifies the importance of self-efficacy and adaptability for rural practice choice and retention. It identifies non-financial incentives used for health worker retention, like the use of hospital land. It lends further credence to the little available evidence on the importance of intrinsic non-incentivised prosocial motives on rural practice choice and retention as well as re-affirming the importance of well-known factors like rural origin.

From Organisational Psychology and Organisational Behaviour, this PhD also introduces the use of the job embeddedness construct to the repertoire of available
theories on health worker retention in rural and remote areas of developing countries. The construct has, hitherto, been mainly applied to assess the retention of supermarket staff [29] and hotel staff [585, 766]. Very few studies are known to have applied job embeddedness practically in any health-related field at all, let alone applying it for retention of health workers in rural areas of any developing country, although several papers have recommended its application or applied it to study some other related issues [552-553, 579, 767]. In addition, it uses job embeddedness to look at why people stay in their current rural jobs instead of their turnover intentions, unlike previous studies.

B: *Methodological contributions*: In terms of methodology, this PhD pioneers the use of the job embeddedness construct in a mixed methods case study and shows that the construct can also be used as a theoretical perspective for a study. Therefore, this PhD shows that researchers from the mixed methods, and purist quantitative or qualitative traditions, can use the job embeddedness construct. Henceforth, I expect to see more mixed-methods studies and purist qualitative studies using the job embeddedness construct. Moreover, this PhD introduces a type of sub-analysis of the construct, which has not been done in previous studies, thus helping to identify strong and weak dimensions of job embeddedness for managerial intervention. Finally, by focusing on retained health workers and why they are retained, in contrast to previous research which focused on policy-makers and students, this PhD contributes to methodology by introducing a third perspective. Therefore, I expect more future studies to look at retention from the perspective of the retained health workers.

C: *Policy contribution*: The policy contribution of this PhD is to further raise the problem of retention of qualified health workers in rural areas for the attention of health policy-makers. The key policy highlights to note from this PhD by policy-makers are the facts that there is need to have formal definitions for the concepts of “rural” areas and “retention”. This PhD proffers operational definitions for each of those terms which are, at least, applicable in Uganda. Secondly, this PhD raises the need for further research on keeping health workers in rural and remote areas, the profile of the retained health workers, the reasons for rural choice and
retention, instead of focusing on why they left. This PhD highlights the existence of retained health workers who could provide affordable solutions for rural practice and retention in developing countries.

It also highlights the importance of health workers’ prosocial behaviour in choice of rural practice, which can be tapped into to select health workers who may be retained in rural areas for long can be a cost-effective approach for developing countries. This PhD also introduces the application of the job embeddedness construct to policy-makers, which adds a new perspective for them to look at staff retention. In particular, it exposes how managers can identify the dimensions of job embeddedness upon which to intervene in order to improve retention. It also identifies the importance of simple, cost-effective activities, e.g. reception of new staff, in strengthening the psychological contract of employees and hence retention.

9.13 Areas for future research
This PhD unveiled multiple potential areas for future research with a bearing on rural staff retention. However, a few stand out for attention. First, its focus was on the factors that lead to retention in the rural areas. One area for potential research opened by this PhD is to compare retained staff with those who never worked in the rural areas and those who worked there but were not retained. This would help to identify any significant differences in demographic and value characteristics, eventually helping policy makers to increase the recruitment of those who are more likely to be retained. A second area is to determine the duration of the effects of incentives, interventions and prosocial motivation in attracting and retaining health workers in rural areas. This would help to identify the action that leads to the longest retention of the highest number of health workers in rural areas. A third issue that needs investigation is a comparison of the leadership and managerial practices of PNFP hospital managers and government hospital managers. This would help in learning lessons from each other in order to improve practice, and hence retention. I have included other potential research areas in Appendix 16 (page 347)
9.14 Limitations of the study

The main limitation of this study is lack of external validity of the quantitative findings. They are only valid for this study and cannot be generalised to the population of all health workers retained in rural areas in Uganda. This is occasioned by two problems: selection bias and a small sample size. Selection bias came about because I used the same purposively-selected participants for both qualitative and quantitative studies since I wanted to determine the job embeddedness of the same people I had interviewed in the in-depth interview. The quantitative study was used to triangulate some of the responses to the qualitative study. Since I had selected the participants of the qualitative study purposively, therefore, this selection bias was inherited by the quantitative study that used the same participants. Whereas purposive selection of participants is a standard practice for qualitative studies, it is raises the problem of selection bias in quantitative studies which normally require random participation.

The second problem that also contributed to lack of external validity of the quantitative findings was the small sample size. The component was underpowered. Basing on a 95% level of confidence, 80% power, 50% estimated prevalence of embeddedness, and a precision of 5%, I would have required about 400 randomly selected participants in each sub-category, in order to get a study with good statistical power to enable the kind of sub-analysis that I did\textsuperscript{35}. This would bring the total sample size to a minimum of 1600 participants. This was impossible as it would have required a very large population from which to draw a random sample. The total number of staff in the whole country in some cadres, like doctors, is smaller than the minimum required for such a randomised study\textsuperscript{36}.

\textsuperscript{35} Sample size estimated with Kish’s formula: \( n = \frac{z^2}{\epsilon^2} \frac{1-p}{p} \), where \( n = \) sample size, \( z = \) z-score for 95% level of confidence, \( p = \) estimated prevalence of job embeddedness and \( \epsilon = \) precision, including a 5% oversampling for anticipated non-response. 768. Kish, L., \textit{Survey Sampling}. 1965, New York: John Wiley and Sons, Inc.

\textsuperscript{36} For example, Uganda has 214 health sub-districts which are supposed to be headed by doctors but only about 80 had doctors before the recent recruitment exercise. The general hospitals are supposed to have 12 doctors but most of the rural hospitals had 1 in 2010. Ministry of Health Uganda and IntraHealth, \textit{Human Resources for Health Audit Report 2010}. 2010, Republic of Uganda: Kampala.
Therefore, due to limited resources and the nature of the problem under investigation, I could not afford to select the participants randomly, and to accrue a minimum sample size required for good statistical power. This would have required me to expand the study to a much wider area, and to include more hospitals. It could only have been feasible at a multi-country level. Therefore, pragmatically, I used the purposively selected sample to demonstrate the application of the method. The sample was, primarily, for the core study which was qualitative, and the quantitative study was done to capture specific aspects that could not be captured by the qualitative study. It is too small for the findings to be generalised beyond the study sample.

Therefore, in the discussion chapter, I give caveats to the reader that because of this problem with external validity, the quantitative findings are only valid for this study and should not be generalised far beyond. That said, however, I note that this was an exploratory case study, designed with very limited resources, and meant to uncover a neglected policy issue and demonstrate the applicability of the job embeddedness construct for rural retention of health workers in a developing country. Moreover, being a case study, it was not expected to ensure statistical generalisation. Otherwise, with 50 participants, the qualitative component, which is the core aspect, has an adequate number of participants. Taken as a whole, the study ensures theoretical generalisation, which is the main goal of a case study. The contribution of the quantitative components is also significant, by giving a measure of a main outcome for the participants and demonstrating useful sub-analysis. Therefore, as an exploratory study meant to highlight the issue of rural retention and to explore the context, it makes important contributions by setting the precedence for larger generalisable quantitative studies and qualitative studies focusing on related items and new issues identified. In particular, it shows the applicability of the job embeddedness construct in developing country settings. Therefore, it is a stepping stone for larger studies and a watershed for application of new methodologies and theoretical constructs in health policy research.
9.15 What I have learnt through this PhD

I have learnt many issues but I mention only three here. The first key issue I have learnt is the beauty and flexibility of the job embeddedness construct in explaining retention. It gives a holistic picture and forces the researcher, theorist or policy-maker to think about issues he/she would have otherwise forgotten or ignored. I will promote its use through dissemination and further research.

The second thing I have learnt from this PhD is the beauty of mixed-methods research which, also, allows flexibility and openness. It avoids paradigmatic polarisation and is accommodative. I found it a more natural approach for my character and experience. I will use it more for my future research.

The third thing I have learnt from this PhD is that there are very good and committed health workers out there, with the necessary goodwill and struggling to deliver good quality care to very needy patients. However, they lack the necessary support from the health system. Health sector resources can be better used to support such health workers to meet the objective of universal coverage with good quality health care. Therefore, I resolve to be part of the direct struggle to ensure that the objective of universal access to quality care is attained.
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Appendix 1: Map of Uganda showing the four regions studied

Map of Uganda Source: [769]

Map of Africa Source: [770]

Location of Uganda in Africa
### Table 0.1 Terms used in the literature search strategy

<table>
<thead>
<tr>
<th>Concept</th>
<th>Terms</th>
</tr>
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<tbody>
<tr>
<td>Rurality</td>
<td>“rural”, “remote”, “underserved”, “under-served”, “health professional shortage area**”, “HPSA”, ”rurality”, “medically underserved area**”</td>
</tr>
<tr>
<td>Retention</td>
<td>“retention”, “retain**”</td>
</tr>
<tr>
<td>Programmes on rural attraction and retention</td>
<td>“physician shortage areas program”, “PSAP”, ”WWAMI”, ”WAMI”, “CREHS”, “MSOAP”</td>
</tr>
<tr>
<td>Studies on issues of the HRH crisis</td>
<td>“discrete choice experiment”, ”DCE”, ”multi-criteria decision analysis”, “MCDA”, ”students”, “systematic review”, “realist review”, “systematic”, “narrative”, “narrative review”, “synthesis”</td>
</tr>
<tr>
<td>Motivation to work in rural areas</td>
<td>“prosocial”, ”pro-social”, ”behaviour”, ”behavior”, ”self-selection”, ”dictator games”</td>
</tr>
<tr>
<td>Educational programmes that lead to working in rural areas</td>
<td>“Family Medicine”, ”Primary Care”, ”Rural Health”, ”telemedicine”, ”telehealth”, ”tele-emergency”, ”consultant outreach”</td>
</tr>
<tr>
<td>Geographic and socio-economic regions</td>
<td>“developing”, ”country”, ”countries”, ”low-income”, ”LIC”, ”middle-income”, ”LMIC”, ”OECD”, ”Europe”, ”the US”, ”USA”, ”territorial”, ”northern territories”, ”Africa”, ”sub-Saharan”, ”southern”, ”south”, ”east”, ”eastern”</td>
</tr>
</tbody>
</table>
For example, a search with the following terms on PubMed yielded 2017 papers: ("human resources for health" OR "HRH" OR "health workers" OR "healthcare workers" OR "health care workers" OR "healthcare professionals" OR "health care professionals" OR "health professionals" OR "nurses" OR "doctors" OR "physicians" OR "allied health professionals" OR "general practitioners" OR "GPs" OR "workforce" OR "midwifery" OR "midwives") AND ("rural" OR "remote" OR "underserved" OR "under-served" OR "health professional shortage area" OR "HPSA" OR "rurality" OR "medically underserved area" OR "practice location")

To narrow them down to the topic of retention, I added a third category, which reduced them to just 60. ("human resources for health" OR "HRH" OR "health workers" OR "healthcare workers" OR "health care workers" OR "healthcare professionals" OR "health care professionals" OR "health professionals" OR "nurses" OR "doctors" OR "physicians" OR "allied health professionals" OR "general practitioners" OR "GPs" OR "workforce" OR "midwifery" OR "midwives") AND ("rural" OR "remote" OR "underserved" OR "under-served" OR "health professional shortage area" OR "HPSA" OR "rurality" OR "medically underserved area" OR "practice location") AND ("retention" OR "retain*")
## Appendix 3: Comparison of some authors on Case Study Methodology

### Table 0.2 Comparison of some authors on Case Study methodology

<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Definition</strong></td>
<td>an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident</td>
<td>-an investigation and analysis of a single or collective case, intended to capture the complexity of the object of study</td>
<td>a means of investigating complex social units consisting of multiple variables of potential importance in understanding the phenomenon</td>
<td>research design best defined as an intensive study of a single unit (a relatively bounded phenomenon) where the scholar’s aim is to elucidate features of a larger class of similar phenomenon - an intensive study of a single unit with an aim to generalize across a larger set of (similar) units...</td>
<td>-detailed examination of a single example of a class of phenomena, a case study cannot provide reliable information about the broader class,...</td>
<td>- a research strategy which focuses on understanding the dynamics present within single settings</td>
</tr>
<tr>
<td><strong>Stated philosophical underpinning/paradigm</strong></td>
<td>Post-positivism</td>
<td>Social constructivism</td>
<td>Social constructivism</td>
<td>Post-positivism</td>
<td>Post-positivism</td>
<td>Post-positivism</td>
</tr>
<tr>
<td><strong>Timing</strong></td>
<td>Contemporary</td>
<td>Could be contemporary or historical</td>
<td></td>
<td>Temporal variation (Yes/No)</td>
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<tr>
<td><strong>Spatial variation</strong></td>
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</tr>
<tr>
<td><strong>Boundaries of the case</strong></td>
<td>Should be unclear</td>
<td>Should be sharp and clear</td>
<td></td>
<td>May be sharp (formal) or unclear (informal)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Typologies</strong></td>
<td>Holistic (single-case or multiple-case) Embedded (single-case or multiple case)</td>
<td>Intrinsic Instrumental Collective</td>
<td>Descriptive, Interpretative, Evaluative</td>
<td>Temporal variation (Yes/No) Spatial variation (Yes /No)</td>
<td>-Randomness of selection (random vs stratified) - Information-oriented (extreme, maximum variation, critical, paradigmatic)</td>
<td>Descriptive Theory-testing Theory-building</td>
</tr>
<tr>
<td><strong>Methods</strong></td>
<td>Either qualitative, quantitative or mixed</td>
<td>Either qualitative, quantitative or mixed</td>
<td>Case study is not a methodological choice but a choice of what is to be studied</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Approach</strong></td>
<td>Emphasises use of a protocol to minimise bias and enhance validity</td>
<td>Transactional interaction between the researcher, researched and phenomenon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transactional interaction between the researcher, researched and phenomenon</td>
</tr>
</tbody>
</table>

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Appendix 4: Participant Information Sheet

Department of Epidemiology & Public Health Medicine
Division of Population Health Sciences
Royal College of Surgeons in Ireland
2 Mercer Street Lower,
Dublin 2, DUBLIN
REPUBLIC OF IRELAND
Dr. Regina Biesma, Lecturer/ Main Supervisor/Principal Investigator
Tel: 00-353-1-402 8584
Fax: 00-353-1-402 2764
E-mail: rbiesma@rcsi.ie

RESEARCH PARTICIPANT INFORMATION LEAFLET
(Version: 2 Date: 30th August 2013)

Study title:
Factors Affecting the Retention of Qualified Health Workers in Rural and Remote Areas of Developing Countries – a Qualitative Case Study of Health Workers Retained in Rural Uganda

Student's name: EVERD MANIPLE BIKAITWOHA
Student's title: Dr.
Telephone number of student: (In Ireland): +353 087 167 6134
(In Uganda): +256 772 592 506

You are being invited to take part in a research study carried out at your workplace by Dr. EVERD MANIPLE BIKAITWOHA. Before you decide whether or not you wish to take part, you should read the information provided below carefully and, if you wish, discuss it with your family, friends or manager. Take time to ask questions – do not feel rushed or under pressure to make a quick decision. You should clearly understand the risks and benefits of taking part in this study so that you can make a decision that is right for you. This process is known as ‘Informed Consent’. You do not have to take part in this study and a decision not to take part will not affect your current or future employment.

You can change your mind about taking part in the study at any time you like. Even if the interview has started, you can still opt out. You do not have to give us a reason. If you do opt out, it will not affect your employment now or in the future.

Why is this study being done?
Using Uganda as a case study, this study aims to identify the factors associated with the retention of health workers in rural areas of developing countries, to determine whether such factors vary from one category of health workers to another and to describe the process of retention in such areas. Knowledge of such factors in general, the cadre-specific reasons and the process of retention may be used to design equitable policies and programmes to train, attract, recruit and retain health workers in rural areas, thus improving the quality of care for rural residents.
Who is organising and funding this study?
This study is being conducted by Dr. EVERD MANIPLE BIAITWOHA in his private capacity as part of academic research for a university degree from the Royal College of Surgeons in Ireland. He is a medical doctor and a lecturer at Uganda Martyrs University, Nkozi. He is funded by that university. Participation in this study is voluntary and no payment is made to the researcher or participants.

Why am I being asked to take part?
You have been selected to participate in the study because you are a qualified health worker who has worked in a rural area for some time, long enough to have the kind of information that the study is looking for.

How will the study be carried out?
This study is done by interview only. It is taking place only in those few health facilities in rural areas of Uganda which have health workers who have served for more than ten years. It is interested in people from two cadres i.e. doctors and Registered Nurses/Registered Midwives.

What will happen to me if I agree to take part?
If you agree to participate, I will ask you some questions verbally and give you a short form to fill. Both the interview and the form should take no more than one hour. In order to keep in time and to obtain an accurate record of what you have to say, I request to use a voice recorder. The study will only ask you for familiar information. Its accuracy will rely on the accuracy of the information you give. It will not look at your employment or academic records.

What are the benefits?
This study is purely for academic purposes and may not benefit you directly, immediately or even at all. There is no guarantee that anybody will benefit from this study because the issues to be discussed depend on decisions to be taken by many levels. However, if the findings inform policy makers and they make policies favourable to health workers, then health workers (you inclusive) and the population in rural areas will benefit from the study.

What are the risks?
This study carries no risks to you, apart from the time you will spend during this discussion. Please feel free to answer any questions that you are comfortable with, and to refuse to answer those with which you are not comfortable. You are free to accept to participate, to refuse to participate or even to withdraw your participation at any time during the interview, with no risk of penalisation by anybody.

What if something goes wrong when I’m taking part in this study?
Nothing is likely to go wrong with you in this study because nothing will be administered to you. If you feel upset during the discussion, you are free to pause the interview or to withdraw your participation altogether.
Will it cost me anything to take part?
The interview will be conducted at your workplace and will not involve travel or telecommunication costs. Therefore, apart from your time, you will incur no other costs. The study does not pay the researcher or its participants.

Is the study confidential?
This study is confidential. The raw data obtained from you will only be accessible to the researcher. Apart from the Consent Form, your name will not be recorded anywhere else. Instead, a code number will be used to identify and track every record. Both the voice and paper records will be safely locked away by the researcher. The Consent Form will be kept separately from the data so that nobody can trace the responses to you. After the interview, the voice record will be transcribed verbatim. You will be given a chance to listen to the recording and to read the transcript before it is analysed. You will be free to erase or change any part of the recording that you feel uncomfortable sharing out. All the data, including the recording, will be safely destroyed five years after the study. Since the study is purely academic, its results will be mainly used to obtain the targeted academic qualifications. However, if they are considered suitable for publication, they may be published in an international scientific journal. No information that you are required to give can be used to identify you as its source, whether the study is published or not. The information you give is to be used only for the current study. In case it is needed for other related studies subsequently, fresh approval for it will have to be granted by a competent Research Ethics Committee. This is a one-time study with no need for follow-up interviews after this one. Your cooperation in this study will be acknowledged. If the study is published, you may receive information about it in published scientific papers.

Can I ask questions about the study?
In case you have any questions about the study, please feel free to ask them now or at any point in the course of the interview.

Where can I get further information about the study?
In case you need further information about this study now or in the future, you may contact the following:

**Researcher**
Dr. Everd Maniple Bikaitwoha
Faculty of Health Sciences
Uganda Martyrs University (UMU)
P. O. Box 5498
Kampala
Mob. Tel. 0772-592506 (any time, until December 31st 2013) or
Mob. Tel. +353 087 167 6134 (after December 2013, any time)
e-mail: everdmaniple@umu.ac.ug
emaniplebikaitwoha@rcsi.ie

**Alternatively, you can contact his supervisor**
Dr. Regien Blesma
Department of Epidemiology
Population and Health Sciences Division
Royal College of Surgeons in Ireland (RCSI)
2 Mercer Street Lower
Dublin 2
Dublin, Ireland
Tel. +353 1 402 8584 (office hours only – GMT)
e-mail: rblesma@rcsi.ie
Appendix 5: Consent Form

Department of Epidemiology & Public Health Medicine  
Division of Population Health Sciences  
Royal College of Surgeons in Ireland  
123 St. Stephens Green,  
Dublin 2, DUBLIN  
REPUBLIC OF IRELAND  
Dr. Regien Biesma, Lecturer/Main Supervisor/Principal Investigator  
Tel: 00-353-1-402 8584  
Fax: 00-353-1-402 2764  
E-mail: rbiesma@rcsi.ie

Annex 3: Research Participants’ Consent Form

RESEARCH PARTICIPANT CONSENT FORM  
(Version: 2 Date: 20th August 2013)

<table>
<thead>
<tr>
<th>Study title: Factors Affecting the Retention of Qualified Health Workers in Rural and Remote Areas of Developing Countries – A Qualitative Case Study of Health Workers Retained in Rural Uganda</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have read and understood the Participant Information Leaflet about this research project. The information has been fully explained to me and I have been able to ask questions, all of which have been answered to my satisfaction.</td>
</tr>
<tr>
<td>I understand that I do not have to take part in this study and that I can opt out at any time. I understand that I do not have to give a reason for opting out and I understand that opting out will not affect my current or future employment.</td>
</tr>
<tr>
<td>I am aware of the potential risks of this research study.</td>
</tr>
<tr>
<td>I have been assured that information about me will be kept private and confidential.</td>
</tr>
<tr>
<td>I have been assured that I will be given access to the transcript and electronic record of my interview and that I may change them if I so wish in order to retain only the information that I wish to share.</td>
</tr>
<tr>
<td>I have been given a copy of the Participant Information Leaflet and this completed consent form for my records.</td>
</tr>
<tr>
<td>Storage and future use of information: I hereby give my permission for information collected about me to be stored or electronically processed for the purpose of scientific research and to be used in related studies or other studies in the future but only if the research is approved by a Research Ethics Committee.</td>
</tr>
</tbody>
</table>

Participant’s Name (Block Capitals): ____________________________  
Participant’s Signature: ____________________________  
Date: ____________________________

To be completed by the Principal Investigator or his nominee.

I, the undersigned, have taken the time to fully explain to the above participant the nature and purpose of this study in a manner that they could understand. I have explained the risks involved as well as the possible benefits. I have invited them to ask questions on any aspect of the study that concerned them.  
Name (Block Capitals): ____________________________  
Qualifications: ____________________________  
Signature: ____________________________  
Date: ____________________________

2 copies to be made: 1 for the participant and 1 for the PI.
Appendix 6: 40-item tool for measuring job embeddedness
Department of Epidemiology & Public Health Medicine
Division of Population Health Sciences
Royal College of Surgeons in Ireland
Mercer Street Lower,
Dublin 2, DUBLIN
REPUBLIC OF IRELAND

Main Supervisor/Principal Investigator
Dr. Regien Biesma, Lecturer/
Tel: 00-353-1-402 8584
Fax: 00-353-1-402 2764
E-mail: rbiesma@rcsi.ie

Participant ID:

Questionnaire on Job Embeddedness (Version: 2 Date: 30th August 2013)

Section A: On-the-job links
1. How long have you been in your current position? (in years) -------------------------------
2. How long have you worked for this company? (in years) -----------------------------------
3. How long have you worked in the healthcare industry? (in years) -------------------------
4. How many co-workers do you interact with regularly? ------------------------------------
5. How many co-workers are highly dependent on you? --------------------------------------
6. How many work teams are you on? --------------------------------------------------------
7. How many work committees are you on? ----------------------------------------------------

Section B: Off-the-job links
1. Are you currently married? (Y/N) -----------------------------
2. If you are married, does your spouse work outside the home? (Y/N) -----------------------
3. Do you own the home you live in? (Y/N) -------------------------
4. My family roots are in this community (Y/N) ---------------------
5. How many family members live nearby? -----------------------------------------------
6. How many of your close friends live nearby? ---------------------------------------------

Section C: On-the-job fit

<table>
<thead>
<tr>
<th>Disagree strongly</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. I like the members of my work group
2. My co-workers are similar to me
3. My job utilizes my skills and talents well
4. I feel like I am a good match for this company
5. I fit with the company’s structure
6. I like the responsibility and authority that I have at this company
7. My values are compatible with the organization’s values
8. I can reach my professional goals working for this organization
9. I feel good about my professional growth and development
### Section D: Off-the-job fit

<table>
<thead>
<tr>
<th>Disagree strongly</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I really love the place where I live</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. The weather where I live is suitable for me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. This community is a good match for me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I think of the community where I live as home</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. The place where I live offers the leisure activities that I like</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Section E: On-the-job sacrifices

<table>
<thead>
<tr>
<th>Disagree strongly</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I have a lot of freedom on this job to decide how to pursue my goals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. The perks on this job are outstanding</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3. I feel that people at work respect me a great deal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I would sacrifice a lot if I left this job</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. My promotional opportunities are excellent here</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I am well compensated for my level of performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. The benefits are good on this job</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. The health care benefits provided by this organization are excellent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. The retirement benefits provided by this organization are excellent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. The prospects for continuing employment with this company are excellent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Section F: Off-the-job sacrifices

<table>
<thead>
<tr>
<th>Disagree strongly</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Agree strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Leaving this community would be very hard</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. People respect me a lot in my community</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. My neighbourhood is safe</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Where can I get further information about the study?

In case you need further information about this study now or in the future, you may contact the following:

**Researcher**
Dr. Everd Maniple Bikaitwoha  
Faculty of Health Sciences  
Uganda Martyrs University (UMU)  
P. O. Box 5498  
Kampala  
Mob. Tel. 0772-592506 (any time, until December 31st 2013) or  
Mob. Tel. +353 087 167 6134 (after December 2013, any time)  
e-mail: emaniplebikaitwoha@rcsi.ie

**Alternatively, you can contact his supervisor**
Dr. Regien Biesma  
Dep’t of Epidemiology & Public Health Medicine  
Population and Health Sciences Division  
Royal College of Surgeons in Ireland (RCSI)  
2 Mercer Street Lower  
Dublin 2  
Tel. +353 1 402 8584 (office hours only – GMT)  
e-mail: rbiesma@rcsi.ie
Appendix 7: The qualitative in-depth interview topic guide

Issue 1: Upbringing

Please tell me about your **Upbringing**

Probe for:

- Rurality of home area
- Presence of relatives and family in a rural area
- Experience of staying in rural areas
- Reason for staying in a rural area
- Duration of stay in a rural area

Issue 2: Background education and training

Please tell me about your **Educational Background**

Probe for:

- Rurality of schools attended
- Levels attended in rural areas
- Duration spent in rural areas
- Curriculum on rural health issues at the training school
- Clerkship in rural areas
- Duration of exposure to rural areas during professional training
- Quality of training and interest in rural areas during training

Issue 3: Incentives and motivation

How did you come to work here?

Probe for:

- Choice/no choice
- Requested by community or influential person
- Headhunted
- Compelled e.g. by government, normal transfer etc
- Obligation e.g. loan repayment
- Presence of a role-model here or desire to be like a role-model
- Incentives
- Promises of support (what type?)
- Professional reasons e.g. independence to do surgery
- Effect of religion
• Patriotism
• Attachment to the people (“my people”) or some individual
• Gratitude to someone
• No alternative (nowhere to go/no opportunities/no information)
• Position of responsibility
• Career advancement
• Targeting pension

**Issue 4: Knowledge of other qualified health workers of the same cadre who have worked in similar places for long**

Probe for:

• Holding such people as a role-model
• Companionship or contemporaries in a rural area
• Circumstances/conditions of work of colleagues in a rural area
• Similarities and differences in circumstances

**Issue 5: Employment History**

Please tell me about your Employment History before coming to work here

Probe for:

• Experience in urban areas
• Duration of service in urban areas
• Comparison of urban area and this place
• Previous service in rural areas
• Experience and duration in rural areas

**Issue 6: Characteristics of current job**

Please tell me about your current job

Probe for:

• Workload
• Scope of work – e.g. complex surgery (doctors), prescription, drip (nurses), surgery (COs)
• Professional autonomy (for all)
• Experience
• Motivation
• Incentives
• Duration of effect of incentives – how long did you feel motivated by the incentives?
• Environment
• security
• Satisfaction
• Tenure
• Feedback
• Autonomy
• Position of Responsibility
• Free time
• Holidays
• Locum relief
• Study leave
• Private practice
• Plans for the future e.g. further studies, intention to leave
• Challenging for the full scope of knowledge and skills
• Job significance
• CME/CPD
• Professional support/supervision
• Equipment and supplies
• Safety at work
• Job security
• Relations with management

**Issue 7: Personal characteristics**

Please tell me more about yourself

Probe for effect of:

• Religion
• Marital status
• Personal plans
• Income-generating activities
• Political activities in the local area
• Social activities in the area
• Entertainment
• Tribe
• Socio-economic background

**Issue 8: Job embeddedness**
On-the-job embeddedness

Probe for:

- Integration process
- Relationship with managers
- Relationship with colleagues
- Relationship with juniors
- Links
- Fit
- What they would sacrifice on leaving

Off-the-job embeddedness

Probe for:

- Relationship with community members
- Reception into local community
- Speaking local language
- Integration into local society
- Nature of local links e.g. marriage
- Involvement in local politics
- Involvement in local social activities e.g. church, culture or other social activities
- Investments in the area
- Respect in the community
- Links e.g. marriage, other relationship
- Fit
- What they would sacrifice on leaving

Issue 9: Intention to leave

What is your opinion about this place (the area and the work station)?

Probe for:

- Feeling rural
- Feeling like leaving to go to a more urban place
- What would take you away from this place?
- In your opinion, what is the single most important reason why you have stayed here for long?

Thank you very much for your time and information
Appendix 8: Duration of in-depth interviews

Table 0.3 Duration of the interviews

<table>
<thead>
<tr>
<th></th>
<th>3 to 10 years</th>
<th>&gt;10 years</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Doctors</td>
<td>Nurses</td>
<td>Doctors</td>
</tr>
<tr>
<td>Minimum</td>
<td>00:37:02</td>
<td>00:17:05</td>
<td>00:26:50</td>
</tr>
<tr>
<td>Maximum</td>
<td>01:18:25</td>
<td>00:44:36</td>
<td>01:05:50</td>
</tr>
<tr>
<td>Average</td>
<td>00:55:01</td>
<td>00:29:14</td>
<td>00:44:38</td>
</tr>
<tr>
<td>Median</td>
<td>00:49:34</td>
<td>00:27:22</td>
<td>00:43:26</td>
</tr>
</tbody>
</table>
### Table 0.4 Example of the Coding Process

<table>
<thead>
<tr>
<th>Original text</th>
<th>Topic</th>
<th>Descriptive Code</th>
<th>First coding (Categories)</th>
<th>Secondary Code (Sub-theme)</th>
<th>Tertiary Code (Theme)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;It was very very motivating and very encouraging and very challenging, because I found myself reading, let’s say, about appendicectomy – although I had some experience … but I had to read a lot. I had to read a lot, especially on surgery and paediatrics, because with medicine and reproductive health, I was more or less at home. And, then, I had to develop interest in public health although I was not very interested, but I found … already a programme in Public Health. …So, the public health was very well developed. So I had to come to like it...” (MA1, Medical Officer, Hospital I)</td>
<td>Integration and embeddedness at the workplace</td>
<td>Facilitators of settlement at the rural workplace</td>
<td>Self-adjustment</td>
<td>Adaptation</td>
<td>Adaptation and compromise</td>
</tr>
<tr>
<td>&quot;You know when you into a community, you have to associate with those people. May be you have reached a family and they don’t even have a mat where to sit, you just say: “Bring a kaveera” [plastic sheeting] and you sit and associate with them. You don’t expect a good seat. (NB1, Registered Nurse, Hospital E)&quot;</td>
<td>Integration and embeddedness in the rural community</td>
<td>Facilitators of settlement in the rural community</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Appendix 10: Odds Ratio analysis tables for intention to quit analysis

#### Table 0.5 Odds ratio table for intention to quit by degree of job embeddedness

<table>
<thead>
<tr>
<th>Job embeddedness</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;3.0</td>
<td>7</td>
<td>29</td>
<td>36</td>
</tr>
<tr>
<td>≤3.0</td>
<td>3</td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>40</td>
<td>50</td>
</tr>
</tbody>
</table>

OR = 0.89 (95% CI: 0.19 – 4.05, p = 0.87)

#### Table 0.6 Odds ratio table for intention to quit by cadre

<table>
<thead>
<tr>
<th>Cadre</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors</td>
<td>7</td>
<td>10</td>
<td>17</td>
</tr>
<tr>
<td>Nurses</td>
<td>3</td>
<td>30</td>
<td>33</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>40</td>
<td>50</td>
</tr>
</tbody>
</table>

OR = 7.00 (95% CI: 1.52 – 32.33, p = 0.001)

#### Table 0.7 Odds ratio table for intention to quit by employer

<table>
<thead>
<tr>
<th>Employer</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gov’t</td>
<td>6</td>
<td>21</td>
<td>27</td>
</tr>
<tr>
<td>PNFP</td>
<td>4</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>40</td>
<td>50</td>
</tr>
</tbody>
</table>

OR = 1.36 (95% CI: 0.33 – 5.55, p = 0.671)

#### Table 0.8 Odds ratio table for intention to quit by sex

<table>
<thead>
<tr>
<th>Sex</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>6</td>
<td>13</td>
<td>19</td>
</tr>
<tr>
<td>Female</td>
<td>4</td>
<td>27</td>
<td>31</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>40</td>
<td>50</td>
</tr>
</tbody>
</table>

OR = 3.12 (95% CI: 0.75 – 12.99, p = 0.119)
Appendix 11: Comparison of study findings with previous literature

Table 0.9 Comparison of key findings of with those of previous studies

<table>
<thead>
<tr>
<th>Present Finding</th>
<th>What was known</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attraction to rural areas</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural choice partly driven by desire to meet needs</td>
<td>Rural choice driven by desire to meet needs along Maslow’s hierarchy</td>
<td>Agreed with past findings but some components e.g. rural area as safe</td>
</tr>
<tr>
<td>along Maslow’s hierarchy</td>
<td>[641, 774-776]; to meet professional needs be “specialist generalist” [114]</td>
<td>haven are new additions</td>
</tr>
<tr>
<td>Rural choice driven by pragmatism and strategy</td>
<td>Not appeared in previous literature</td>
<td>Largely new contribution</td>
</tr>
<tr>
<td>Rural choice driven by altruism and other</td>
<td>Pro-social behaviour identified in previous studies [468, 572-573]</td>
<td>Agreed with previous findings</td>
</tr>
<tr>
<td>prosocial behaviour</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural service out of compliance</td>
<td>Rural practice is a response to official deployment, presence of jobs,</td>
<td>Agreed with previous findings</td>
</tr>
<tr>
<td></td>
<td>incentives, compulsory requirement etc [26-28, 77, 156, 289]</td>
<td></td>
</tr>
<tr>
<td>Rural service out of reluctant obedience</td>
<td>Reported as “reluctant stayers” [763]</td>
<td>Agreed with past findings</td>
</tr>
<tr>
<td><strong>Embeddedness in a rural area</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy explains rural embeddedness and</td>
<td>Mild reference to self-efficacy influencing rural retention [746]</td>
<td>Largely new contribution, advancing existing basis</td>
</tr>
<tr>
<td>retention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adaptability eases embeddedness</td>
<td>Not mentioned as such in previous literature</td>
<td>Largely new contribution</td>
</tr>
<tr>
<td>Importance of reception in embeddedness and</td>
<td>Not mentioned in previous literature</td>
<td>New contribution</td>
</tr>
<tr>
<td>retention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Importance of deploying authority in integration</td>
<td>Not mentioned in previous literature</td>
<td>New contribution</td>
</tr>
<tr>
<td>Job embeddedness predicts turnover intention</td>
<td>Job embeddedness predicts turnover intention [29, 32, 522, 529, 571, 586]</td>
<td>Agrees with previous findings</td>
</tr>
<tr>
<td>Job embeddedness correlates with duration of</td>
<td>Not reported in previous literature</td>
<td>New contribution</td>
</tr>
<tr>
<td>retention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Present Finding</td>
<td>What was known</td>
<td>Assessment</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
<td>------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Comparison of degree of job embeddedness by individual, cadre, employer</td>
<td>Not reported previously</td>
<td>New contribution. Previous studies reported correlation coefficients between embeddedness and turnover</td>
</tr>
<tr>
<td>PNFP staff more embedded than government staff</td>
<td>Not reported previously</td>
<td>New contribution. Previous studies do not compare embeddedness by employer</td>
</tr>
<tr>
<td>PNFP nurses more embedded than PNFP doctors</td>
<td>Not reported previously</td>
<td>New contribution. Previous studies do not compare embeddedness by cadre</td>
</tr>
</tbody>
</table>

**Retention in a rural area**

| Support networks improve retention | Social and professional support networks improve rural retention [426] | Agrees with previous findings but adds peer networks and alliances for managers |
| Resilience to shocks increases retention | Job embeddedness increases resilience to shocks and retention [539, 569] | Agrees with previous findings |
| Retention due to satisfaction | Some retained staff are satisfied with their rural retention [118] | Agrees with previous findings but adds new reasons e.g. postgraduate qualifications |
| Retention due to rural adaptation | Some retained staff stay due to adaptation [777] | Agrees with previous findings |
Appendix 12: Ethics Approval Letter from RCSI

Royal College of Surgeons in Ireland
The Research Ethics Committee
121 St. Stephens Green, Dublin 2, Ireland.
Tel: +353 1 4022373  Fax: +353 1 4022205  Email: recadmin@rcsi.ie

Dr. David Smith, Acting Chair
Dr. Niamh Clarke, Convenor

5th September 2013

Evedr Maniple Bikaitwoha
Dept of Epidemiology & Public Health Medicine,
Division of Population Health Sciences,
Royal College of Surgeons in Ireland,
2 Mercer Street Lower,
Dublin 2

<table>
<thead>
<tr>
<th>Ethics Reference No:</th>
<th>REC804</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Title:</td>
<td>Factors Associated With the Retention of Qualified Health Workers in Rural and Remote Areas of Developing Countries – a Case Study of Health Workers Retained in Rural and Remote Areas of Developing Countries - A Qualitative Case Study of Health Workers Retained in Rural Uganda</td>
</tr>
<tr>
<td>Researchers name:</td>
<td>Dr Evedr Maniple Bikaitwoha</td>
</tr>
<tr>
<td>Principle investigator of the project</td>
<td>Dr. Regien Blesma (Dept of Epidemiology, RCSI)</td>
</tr>
<tr>
<td>Other Individuals Involved:</td>
<td>Prof. Steve Thomas and Prof. Charles Normand (Department of Health Policy, Planning and Management, Trinity College Dublin)</td>
</tr>
</tbody>
</table>

Dear Evedr,

Thank you for your Research Ethics Committee (REC) application. We are pleased to advise that ethical approval has been granted by the committee for this study.

This letter provides approval for data collection for the time requested in your application and for an additional 6 months. This is to allow for any unexpected delays in proceeding with data collection. Therefore this research ethics approval will expire on 5th September 2014.

Where data collection is necessary beyond this point, approval for an extension must be sought from the Research Ethics Committee.

This ethical approval is given on the understanding that:

- All personnel listed in the approved application have read, understand and are thoroughly familiar with all aspects of the study.
- Any significant change which occurs in connection with this study and/or which may alter its ethical consideration must be reported immediately to the REC, and an ethical amendment submitted where appropriate.
- Please submit a final report to the REC upon completion of your project.

We wish you all the best with your research.

Yours sincerely,

[Signature]

PP Dr. Niamh Clarke (Convenor)
Dr David Smith (Acting Chair)
Appendix 13: Notice of Ethics Approval by UNCST

Notice of UNCST approval, SS 3288

Leah Nawegulo
Oct 3

To everdmaniple@yahoo.com, ’Leah Nawegulo’, mutumba.beth@yahoo.com,

Dear Mr. Bikuitwoha,

RE: FACTORS AFFECTING THE RETENTION OF QUALIFIED HEALTH WORKERS IN RURAL AND REMOTE AREAS OF DEVELOPING COUNTRIES-A QUALITATIVE CASE STUDY OF HEALTH WORKERS RETAINED IN RURAL UGANDA (SS 3288)

This is to notify you that the Uganda National Council for Science and Technology (UNCST) approved the above protocol on 2nd October 2013.

The approval is subject to the following condition:

1. Obtaining of clearance to the study districts from the Research Secretariat, Office of the President;
   The process of obtaining clearance from the Research Secretariat, Office of the President is handled by UNCST on behalf of the researcher. Once approval has been secured, you will be notified.

Yours sincerely,

Leah Nawegulo
for: Executive Secretary
UGANDA NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY
Appendix 14: Approval letter from UNCST

Uganda National Council for Science and Technology
(Established by Act of Parliament of the Republic of Uganda)

Our Ref: SS 3288

21/01/2014

Mr. Everd Nandole Bikutwaha
Uganda Martyrs University
P.O. Box 5406
Kampala

Re: Research Approval:

Partners affecting the retention of qualified health workers in rural and remote areas of developing countries: A qualitative case study of health workers retained in rural Uganda

I am pleased to inform you that on 02/10/2013, the Uganda National Council for Science and Technology (UNCST) approved the above mentioned research project. The approval of the research project is for the period of 02/10/2012 to 02/10/2014.

Your research registration number with the UNCST is SS 3288. Please, cite this number in all your future communications with UNCST in respect of the above research project.

As Principal Investigator of the research project, you are responsible for fulfilling the following requirements of approval:

1. All co-investigators must be kept informed of the status of the research.
2. Changes, amendments, and addenda to the research protocol or the consent form (where applicable) must be submitted to the designated local institutional review committee (IRC) or Lead Agency for re-review and approval before the activation of the changes. UNCST must be notified of the approved changes within five working days.
3. For clinical trials, all serious adverse events must be reported promptly to the designated local IRC for review with copies to the National Drug Authority.
4. Unanticipated problems involving risks to research subjects/participants or other must be reported promptly to the UNCST.
5. New information that becomes available which could change the risk/benefit ratio must be submitted promptly for UNCST review.
6. Only approved study procedures are to be implemented. The UNCST may conduct unannounced audits of all study records.

Below is a list of documents approved with this application:

<table>
<thead>
<tr>
<th>Document Title</th>
<th>Language</th>
<th>Version</th>
<th>Version Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Research proposal</td>
<td>English</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2. In-depth Interview Guide</td>
<td>English</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>3. Questionnaire</td>
<td>English</td>
<td>2</td>
<td>30 Aug 2013</td>
</tr>
<tr>
<td>4. Research Participant Information Leaflet</td>
<td>English</td>
<td>2</td>
<td>30 Aug 2013</td>
</tr>
<tr>
<td>5. Research Participant Consent Form</td>
<td>English</td>
<td>2</td>
<td>30 Aug 2013</td>
</tr>
</tbody>
</table>

Yours sincerely,

[Signature]

Lilian Namwebo Omongo
Executive Secretary
UGANDA NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

LOCATION/CORRESPONDENCE
P.O. Box 6814
KAMPALA, UGANDA

COMMUNICATION
TEl.: (256) 414 705909
FAX: (256) 414 333 079
EMAIL: info@uncst.go.ug
WEBSITE: http://www.uncst.go.ug
Appendix 15: Letter requesting permission from Hospital Managers

Department of Epidemiology & Public Health Medicine
Division of Population Health Sciences
Royal College of Surgeons in Ireland
123 St. Stephens Green,
Dublin 2, DUBLIN
REPUBLIC OF IRELAND
Dr. Regien Bieszma, Lecturer/Principal Researcher/Supervisor
Tel: 00-353-1-402 8584
Fax: 00-353-1-402 2764
E-mail: rbieszma@rcsi.ie

To the Medical Superintendent/CEO
........................................ Hospital

Dear Sir/Madam,

Re: REQUEST FOR PERMISSION TO INTERVIEW STAFF IN YOUR HOSPITAL

This is to request for permission to interview some staff in your hospital. I am a Ugandan Medical Officer and PhD student at the Royal College of Surgeons in Ireland (RCSI). I am currently conducting my research on the factors associated with retention of qualified health workers in rural and remote areas. I would like to interview long-serving doctors and nurses in this hospital. This hospital has been selected because it is considered to be in a rural or remote location according to the operational definition used in this study.

I will interview the selected participants individually and at work. The interviews should last no more than sixty minutes per participant and should not significantly interrupt duties. Each participant will be asked to give personal consent to the interview. Those selected are free to decline to participate or to withdraw their participation at any stage of the interview without any personal consequences.

There are no direct benefits or risks from this study to the hospital or to the individual participants. This study is purely for academic purposes. However, it is hoped that its findings may contribute to influencing the thinking and policies on retention of qualified health workers in rural and remote areas. At the end of the study, the findings may be published in an international peer-reviewed journal, and thus be accessible to a wide audience.

This research study has been approved by the Research Ethics Committee of the RCSI and Uganda National Council for Science and Technology (UNCST). However, in case of any queries regarding the conduct of this study, please feel free to contact my supervisor whose name and address appears at the top of this request. Looking forward to your support.

Yours sincerely,

Dr. Everd Maniple Bikaiwiha
(In Uganda): Tel. 0772-592506 or (in Ireland): Tel. (+353) 087 167 6134
everdmaniple@uumu.ac.ug or emaniplebikaiwiha@rcsi.ie
Appendix 16: Potential research issues for the future

This PhD identified multiple areas for potential research in future, in order to further address the issue of health worker retention in rural and remote areas of developing countries. This list is an addendum to the key issues raised in Areas for future research (see page 276).

1. Applying dictator games to determine prosocial behaviour at training school level
2. Identifying the determinants of person-place fit of health workers in rural areas
3. Suitable interventions to support altruism in retaining rural health workers
4. Effect of rural exposure programmes on rural practice choice and retention
5. Role and strength of self-efficacy in rural practice and retention
6. Develop locally adapted assessment scale for self-efficacy for rural practice
7. Lessons of implementation of bonding schemes from Rwanda and Ethiopia
8. Why PNFPs retain staff longer than government, despite better pay and job security in government
9. Larger sample for the quantitative study of job embeddedness
10. Role of surgical camps in retention of doctors in rural areas
11. Prevalence of locum tenens and effect on recruitment and retention
12. Extent and effect of use hospital land as a retention incentive
13. Conduct staff satisfaction studies in both government and PNFP and compare results
Appendix 17: Funding of the PhD

This PhD received generous funding from an eclectic mixture of sources with a common string that binds them: concern for social justice. I received the bulk of my funding from a donor who requested anonymity. That partner is interested in developing African leaders as a matter of social justice. The support was channelled through my employers, Uganda Martyrs University (UMU). UMU paid my salary throughout the course, coordinated my interaction with the sponsors, and paid fees promptly. I also received funding from Doctors with Africa CUAMM37, an Italian NGO with which I had worked for thirteen years before commencing this course. Doctors with Africa CUAMM believes in the right to health as a fundamental human right and struggles to provide good quality health care where it is needed most. Currently, it has projects in several conflict, post-conflict and deprived African countries. I worked in the Rwanda and Uganda projects. The fourth source of funding was the Coordinating Health Research in Africa and Ireland Consortium (CHRAIC)38 project of the Royal College of Surgeons in Ireland (RCSI) which offered overheads and did all the organisation. The fifth source is my immediate and extended family and friends. We met the opportunity costs of the course, as well as some real financial costs. All these stakeholders invested in this PhD in the belief that it is a necessary contribution to advancing the cause of social justice, through increasing access to qualified health workers in rural and remote areas. I am grateful to all of them and I declare that, other than me, none of the other funders was involved in the selection of the topic, design or implementation of the study, or the writing of this PhD. I will be eternally grateful for all your contribution.

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37 CUAMM originally stood for Collegio Universitarii d'Aspiranti Medici Missionari (University College for Aspiring Missionary Doctors). It was founded in 1950, in the Italian city of Padua, with a vision to send doctors as medical missionaries to contribute social care to evangelization efforts. Over the years, its mission, geographical focus and name have evolved to the current Doctors with Africa CUAMM and delinking from evangelization. For further information, please see www.doctorswithafrica.org

38 For further information on the CHRAIC project, please see www.chraic.org
Appendix 18: Dissemination Plan

I conducted this study within the framework of the requirements for the award of a PhD in Health Systems Research of the Royal College of Surgeons in Ireland (RCSI). Upon completion, I will submit hard-bound copies to the College and some of them will be made available to the audience of other researchers through the RCSI library. In addition, I will submit hard-bound copies to the university library of Uganda Martyrs University, where they will be accessible to their audience. I will also give copies to my sponsors, some of who are international, like Doctors with Africa CUAMM. I will prepare policy briefs to be disseminated to policy makers at Uganda’s Ministry of Health headquarters. Specifically, I will target the Director for Planning, the Commissioners in the Departments of Planning; and Clinical and Curative Services, and the Assistant Commissioners (Planning; Clinical and Curative Services; Human Resources Development; and Human Resources Management). I will also target other national-level stakeholders in NGOs working in Human Resources for Health, especially The IntraHealth Uganda Capacity Program, the faith-based medical bureaux (UCMB, UPMB, UMMB and UOMB).

I will endeavour to present the findings in scientific conferences in Uganda and abroad. So far, I have been invited to present the findings to two meetings of the Uganda Catholic Medical Bureau (UCMB), whose hospitals I visited in the study. In the middle of 2015, they will hold a quarterly Technical Meeting of Hospital Managers and the Annual General Meeting for all the managers of the lower level facilities. I will also target local and international health policy or research conferences where it will be applicable, even if as only a poster presentation. I will book a slot to present the findings in the Annual Research Conference of Uganda Martyrs University, which takes place in November every year. I will endeavour to publish the findings in international peer-reviewed journals. I intend to try to get one paper each in top-level relevant journals: Health Policy and Planning, Social Science & Medicine and Human Resources for Health. I will also try journals on the subject: Australian Journal of Rural Health and Rural and Remote Health. I anticipate to get at least two papers published from this study – one mixed-methods study and one literature review paper. I hope to have at least one paper
accepted for publication by the end of 2015. The Faculty of Health Sciences where I work also publishes a journal, *Health Policy and Development*, which is available on the internet and produces hard copies which are disseminated to all districts in Uganda. I will publish a synopsis of the study in that journal and send hard copies to all the participants in the study as a way of feedback to them.

I will give a copy to the Uganda National Council for Science and Technology (UNCST) which approved the study. Although this is a requirement for the approval, the Council also has a library which is used by researchers and the study will be accessible to the public through that channel. Finally, being a university lecturer, I will disseminate the findings and teach the methodology to my students of four courses: Master of Science in Health Services Management, and Master of Science in Hospital Management, Master of Public Health in Population and Reproductive Health, and Master of Public Health in Health Promotion. Some of the students on the courses come from other countries in Africa. Therefore, I will disseminate the findings to those countries through that channel.