

申 报	系列：教师系列 教学科研并重 型
	专业：企业管理
	职称：副教授

业绩成果材料

（申报人的业绩成果材料包括论文、科研项目、获奖以及其他成果等）

单 位（二级单位） 经济管理学院

姓 名 徐光毅

材料核对人：

单位盖章：

核对时间：

华南农业大学制

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科研项目

教育部司局函件

教社科司函〔2024〕58号

2024年度教育部人文社会科学研究 一般项目立项通知书

华南农业大学 徐光毅同志：

您申报的《人机协同情境下绩效评估公平感知研究：影响机制与提升策略》项目，经专家评审和面向社会公示，现正式批准为2024年度教育部人文社会科学研究青年基金项目。

项目批准号：**24YJC630249**

立项时间：2024年9月11日

批准经费：**8万元**

立项后《申请评审书》即成为有约束力的协议，请您及项目责任单位按照《教育部人文社会科学研究项目管理办法》（教社科〔2006〕2号）承担相应责任并执行以下规定：

1.项目负责人要按照《申请评审书》填写的研究内容及研究计划开展项目研究，坚持正确的政治方向、价值取向、研究导向，弘扬优良学风，遵守学术规范，扎实开展研究工作，着力推出精品力作，确保项目按期保质保量完成。所有出版或发表的项目研究成果，须在显著位置标明“教育部人文社会科学研究项目”字样和项目批准号。

2.请按照《高等学校哲学社会科学繁荣计划专项资金管理办法》（财教〔2021〕285号）以及国家有关科研经费管理制度，合理合规使用经费，提高经费使用效益。

3.教育部人文社科研究项目自批准之日起，研究周期一般为3年，特殊情况可申请延期1-2年。须在规定日期前按照《教育部人文社会科学

研究项目成果鉴定和结项办法》的规定程序和要求申请结项，并提交《教育部人文社会科学研究项目终结报告书》及有关结项材料。

4.实施周期三年以上的项目须接受一次中期检查，请在项目管理平台按照相关提示提交中期检查表。教育部人文社科研究项目实行定期清理制，本年度立项的项目清理截止日为 2029 年 9 月 30 日。

5.确需对项目重要事项进行变更的，请通过“教育部人文社会科学研究管理平台·中后期管理系统”在线进行，不需提供纸质审批材料，审批结果以系统显示为准。变更审批按照如下规定执行：变更项目负责人或项目责任单位、改变项目名称、研究内容有重大调整、改变最终研究成果形式等事项，项目责任单位在系统中审核后，由我司审批；在研究方向不变、不降低预期目标的前提下，调整研究思路或研究计划，以及因身体原因或不可抗拒因素自行申请终止或撤销项目，项目责任单位在系统中审核后，提交我司备案；调整各类项目的课题组成员，不超过项目研究最长期限（5 年）的延期申请，由项目责任单位直接审批。

6.被终止项目的负责人 3 年内不得申报或者参与申报教育部项目，被撤销项目的负责人 5 年内不得申报或者参与申报教育部项目。被撤销或终止的项目，项目负责人所在高校负责追回已拨经费或已拨剩余经费，由学校计划内财务账户原渠道返回教育部账户。

7.根据评审专家意见，部分课题名称做了修改，请以立项通知为准。

以上规定，项目负责人及所在高校应严格遵守。如有异议，可以不接受资助（书面提出申请），立项协议自行废止。请在收到通知书 30 日内，准备项目申报书纸质版 1 份，签名、盖章后，按单位集中报送，报送要求、地址见《教育部社科司关于 2024 年度教育部人文社会科学研究一般项目申报工作的通知》。



受理编号: c232019102400000593

项目编号: 2023A1515110342

文件编号: 粤基金字(2024)4号

广东省基础与应用基础研究基金项目 任务书

项目名称: 知识型员工数字化转型压力的形成机制、影响后效及干预策略研究

项目类别: 区域联合基金-青年基金项目

项目起止时间: 2023-11-01 至 2026-10-31

管理单位(甲方): 广东省基础与应用基础研究基金委员会

依托单位(乙方): 华南农业大学

通讯地址: 广东省广州市天河区五山路483号

邮政编码: 510642

单位电话: 020-85283435

项目负责人: 徐光毅

联系电话:



(广东科技微信公众号)



(查看任务书信息)



(受理纸质材料二维码)

广东省基础与应用基础研究
基金委员会
二〇二〇年制

填写说明

一、项目任务书内容原则上要求与申报书相关内容保持一致，不得无故修改。

二、项目承担单位通过广东省科技业务管理阳光政务平台下载项目任务书，按要求完成签名盖章后扫描上传到广东省科技业务管理阳光政务平台。

三、签名盖章说明。请分别在单位工作分工及经费分配情况页、人员信息页、签约各方页等地方按要求签字或盖章，签章不合规或错漏将不予受理。其中，人员信息页要求所有参与人员本人亲笔签名，代签或印章无效，漏签将不予受理。

四、本任务书自签字并加盖公章之日起生效，各方均应负本任务书的法律责任，不应受机构、人事变动影响。

五、根据《广东省科学技术厅广东省财政厅关于深入推进省基础与应用基础研究基金项目经费使用“负面清单+包干制”改革试点工作的通知》（粤科规范字〔2022〕2号），2022年度及以后立项资助的全部省基金项目（包括省自然科学基金、省市联合基金、省企联合基金项目等）均适用“负面清单+包干制”，项目提交申请书和任务书时无需编制费用明细科目预算。

一、主要研究内容和要达到的目标

本项目以“知识型员工数字化转型压力”为核心主题，深入探讨员工数字化转型压力潜在的形成机制与影响后效，并寻找可能的干预策略。纵观现有文献，尚不能回答数字化转型情景下“知识型员工数字化转型压力如何形成？”“有何影响后效？”“应采取怎样的干预策略？”等重要问题。通过整合工作要求-资源模型、压力认知评价理论等理论视角，深入探讨知识型员工数字化转型压力的形成机制、影响后效及干预策略等研究内容。主要子研究之间内容上密切联系，逻辑上存在递进关系。主要研究内容包括：

第一，探讨知识型员工数字化转型压力的形成机制。该研究的核心问题是“企业实施数字化转型战略是否以及如何给知识型员工带来数字化转型压力？”本研究整合身份理论和工作要求-资源模型，探讨数字化转型如何诱发员工的身份威胁，进而导致知识型员工数字化转型压力。

第二，揭示知识型员工数字化转型压力的影响后效。该研究的核心问题“员工在面对数字化转型诱发的转型压力时，如何通过情感反应过程对其行为倾向产生影响，其潜在的边界条件是什么？”本研究主要依据压力认知评价理论，捕捉员工面对数字化转型压力时的多重情感反应，以及这些情感反应如何影响自身的行为倾向。

第三，考察知识型员工数字化转型压力的干预策略。该研究的核心问题“探讨组织如何构建积极的人力资源实践，引导员工采取积极主动的压力应对方式，进而缓数字化转型压力的负面效应。最终引导员工主动融入并积极参与企业数字化转型进程。

研究目标总结如下：第一，整合身份理论和工作要求-资源模型，探讨企业数字化转型对知识型员工数字化转型压力潜在影响及其作用机制，即员工数字化转型压力的形成机制；第二，基于压力认知评价理论，剖析员工身份威胁两种情感反应（数字化转型承诺vs数字化转型抵制）的边界条件，进而影响其行为倾向，即知识型员工数字化转型压力的影响后效。第三，基于组织与个体交互的视角，揭示数字化人力资源管理与人力资源管理系统成熟度的联合作用对员工数字化转型压力的调节效应及作用机制，即知识型员工数字化转型压力的干预策略。上述研究目标的关系密切关联，逻辑上逐步递进。目标一和目标二试图揭示数字化转型情景下知识型员工转型压力的形成机制和影响后效，既能厘清知识型员工数字化转型压力产生的根源，又能发掘数字化转型压力影响后效的作用机理，更为寻找有效的干预策略提供启发。最后，基于管理层的人力资源实践探讨知识型员工数字化转型压力的干预策略。

二、项目预期获得的科研成果及形式

论文及专著情况	国家统计源刊物以上刊物 发表论文（篇）		4		科技报告（篇）		0	
	其中被SCI/EI/ISTP收录 论文数（篇）		3		培养人才（人）		5	
	专著（册）		0		引进人才（人）		0	
专利情况(项)	发明专利		实用新型专利		外观设计专利		国外专利	
	申请	授权	申请	授权	申请	授权	申请	授权
其他	发表实践导向案例成果（2个），参加学术会议（5~6次）							

三、项目进度和阶段目标

(一) 项目起止时间： 2023-11-01 至 2026-10-31		
(二) 项目实施进度及阶段主要目标：		
开始日期	结束日期	主要工作内容
2023-11-01	2024-10-31	①在已有文献积累的基础上，对前沿文献进行跟踪，开展文献收集与研究，做好理论准备；②明确企业数字化转型、员工感知身份威胁、个体数字能力、数字平台基础、数字化转型压力等主要变量的测量量表，细化总体研究方案，完善与本项目相关的理论模型构建（6个月左右）；③进行探索性访谈，并收集第一轮问卷数据。
2024-11-01	2025-10-31	①在数据收集与整理的基础上，结合研究模型对相应数据进行实证检验，并完成实证结果的分析与写作（3个月）；②结合理论研究与实证分析结果，围绕本项目所涉及的研究内容撰写实证论文；③选择合适的国内外期刊，完成论文投稿，争取在本年度发表2-3 篇论文；④将符合要求的研究论文提交参加2025 年度中国人力资源管理论坛、IACMR、AOM 等国内外顶级学术会议，与国内外学者进行学术交流。
2025-11-01	2026-10-31	①在与同行进行学术交流的基础上，进一步对论文内容进行修改和完善，并对退回修改的论文进行修改以及完成计划内的论文撰写与投稿，争取本年度在自科管理学部认定的重点期刊发表论文2~3 篇（A 类1 篇，B 类1~2篇）；②组织小型学术研讨会，邀请与本项目主题相关的国内外知名学者到申请人依托单位进行学术研讨，对各项研究内容进行修改、完善与提炼；③撰写项目结题报告，总结研究经验、准备项目验收，并为今后继续开展研究做好准备。

四、项目总经费及省基金委经费预算

(一) 省基金委经费下达总额: (大写) 壹拾万圆整; (小写) 10万元;					
(二) 省基金委经费年度下达计划:					
年度	2023 年	年	年	年	年
经费(万元)	10.00				

五、人员信息

项目负责人								
姓名	证件号码	年龄	性别	职称	学历	在项目中承担的任务	所在单位	签名
徐光毅		34	男	讲师	博士研究生	项目负责人	华南农业大学	徐光毅

六、工作分工及财政经费分配

承担/参与单位名称 (盖章)	工作分工	省级财政科技资金分配 (万元)
 华南农业大学	项目申请人承担100%的研究工作。华南农业大学独立承担项目的研究任务，负责本项目的调研组织、日常管理及结题等全程管理和研究责任，并承担经费管理责任。	10
	合计	10

七、任务书条款

第一条 甲方与乙方根据《中华人民共和国民法典》及国家有关法规和规定，按照《广东省科学技术厅关于广东省基础与应用基础研究基金（省自然科学基金、联合基金等）项目管理的实施细则（试行）》《省级科技计划项目任务书管理细则》《广东省省级科技计划项目验收结题工作规程（试行）》等规定，为顺利完成（2023）年知识型员工数字化转型压力的形成机制、影响后效及干预策略研究专项项目（项目编号：2023A1515110342）经协商一致，特订立本任务书，作为甲乙双方在项目实施管理过程中共同遵守的依据。

第二条 甲方的权利义务：

1. 按任务书规定进行经费核拨的有关工作协调。
2. 根据甲方需要，在不影响乙方工作的前提下，定期或不定期对乙方项目的实施情况和经费使用情况进行检查或抽查。
3. 根据《广东省科研诚信管理办法(试行)》等规定对乙方进行科技计划信用管理。

第三条 乙方的权利义务：

1. 确保落实自筹经费及有关保障条件。
2. 按任务书规定，对甲方核拨的经费实行专款专用，单独列账，并随时配合甲方进行监督检查。
3. 经费使用按照广东省级财政科研项目经费使用等有关规定进行管理。
4. 项目依托单位应制定经费使用“负面清单+包干制”内部管理制度并报甲方备案。
5. 使用财政资金采购设备、原材料等，按照《广东省实施〈中华人民共和国招标投标法〉办法》有关规定，符合招标条件的须进行招标。
6. 项目任务书任务完成后，或任务书规定的任务、指标及经费投入等提前完成的，乙方可提出验收结题申请，并按甲方要求做好项目验收结题工作。
7. 若项目发生需要终止结题的情况，乙方须提出终止结题申请，并按甲方要求做好项目终止结题工作。
8. 在每年规定时间内向甲方如实提交上年度工作情况报告，报告内容包含上年度项目进展情况、经费决算和取得的成果等。
9. 按照国家和省有关规定，提交科技报告及其他材料。
10. 利用甲方的经费获得的研究成果，项目负责人和参与者应当注明获得“广东省基础与应用基础研究基金（英文：Guangdong Basic and Applied Basic Research Foundation）（项目编号）”资助或作有关说明。
11. 乙方要恪守科学道德准则，遵守科研活动规范，践行科研诚信要求，不得抄袭、剽窃他人科研成果或者伪造、篡改研究数据、研究结论；不得购买、代写、代投论文，虚构同行评议专家及评议意见；不得违反论文署名规范，擅自标注或虚假标注获得科技计划（专项、基金等）等资助；不得弄虚作假，骗取科技计划（专项、基金等）项目、科研经费以及奖励、荣誉等；不得有其他违背科研诚信要求的行为。
12. 确保本项目开展的研究工作符合我国科研伦理管理相关规定。

第四条 在履行本任务书的过程中，如出现广东省相关法律法规重大改变等不可抗力情况，甲方有权对所核拨经费的数量和时间进行相应调整。

第五条 在履行本任务书的过程中，当事人一方发现可能导致项目整体或部分失败的情形时，应及时通知另一方，并采取适当措施减少损失，没有及时通知并采取适当措施，致使损失扩大的，应当就扩大的损失承担责任。

第六条 本项目技术成果的归属、转让和实施技术成果所产生的经济利益的分享，除双方另有约定外，按国家和广东省有关法规执行。

第七条 根据项目具体情况，经双方另行协商订立的附加条款，作为本任务书正式内容的一部分，与本任务书具有同等效力。

第八条 本任务书一式三份，各份具有同等效力。甲、乙方及项目负责人各执一份，三方签字、盖章后即生效，有效期至项目结题后一年内。各方均应负任务书的法律责任，不应受机构、人事变动的影响。

第九条 乙方必须接受甲方聘请的本项目任务书监理单位的监督和管理。监理单位按照甲方赋予的权利对本项目任务书的履行进行审核、进度调查，对项目任务书变更、经费使用情况进行监督管理及组织项目验收。

说明：1. 本任务书中，凡是当事人约定无需填写的内容，应在空白处划（/）。

2. 委托代理人签订本任务书的，应出具合法、有效的委托书。

八、本任务书签约各方

管理单位（甲方）：

广东省基础与应用基础研究基金委员会（盖章）

法定代表人（或法人代理）：

曾路

（签章）

2024 年 04 月 08 日

依托单位（乙方）：

华南农业大学

（盖章）

法定代表人（或法人代理）：

薛红卫

（签章）

联系人（项目主管）姓名：

倪慧群

（签章）

Email: kjcgxk@scau.edu.cn

电话： 020-85283435 / 15920301530

开户单位名称：

华南农业大学

开户银行名称：

广东广州工行五山支行

开户银行账号：

3602002609000310520

2024 年 4 月 10 日

联系人（项目负责人）姓名：

徐光毅

（签名）

Email: xugy1990@163.com

电话：

2024 年 4 月 12 日

广东省哲学社会科学规划专项小组

粤社科规专通〔2023〕31号

广东省哲学社会科学规划 2023 年度 青年项目立项通知书

徐光毅同志：

经专家评审及省哲学社会科学工作领导小组审批，您申报的广东省哲学社会科学规划 2023 年度青年项目《数字化转型意义认知对员工支持意愿和参与行为影响研究》获准立项，批准号：GD23YGL33，资助经费 2.0 万元，第一次拨款 1.4 万元，预留经费 0.6 万元。请于 6 月 28 日前登录广东省哲学社会科学规划项目管理平台认真填写立项回执，并通过责任单位审核后提交省社科规划专项小组。

填写立项回执后，项目申请书即成为立项协议，对项目负责人及其所在单位具有约束力。项目负责人所在单位须对立项协议的履行承担保证责任。项目负责人及所在单位须了解和执行以下规定：

1.课题组须学习并遵守《广东省哲学社会科学规划项目管理办法》。对于出现违规行为的，省社科规划专项小组依据《广东省哲学社会科学规划项目管理办法》的相关规定进行处理。

2.立项项目经费不再追加。课题组如不接受，省社科规划专项小组将撤销该项目立项。而立项经费一经接受，课题组将不得以资助经费不足为由，擅自变更原设计的最终成果形式和内容。

3.项目经费分两次拨付，预留经费将在项目通过鉴定结项后拨付。拨款账号、开户行、户名如有变动，须以书面形式及时告知省社科规划专项小组，以便准确拨款。

4.项目研究过程中，如有变更项目负责人、延长完成时间、改变成果内容或形式、变更项目管理单位、变更或增补课题组成员、终止或撤销项目等重要事项，项目负责人或所在单位必须按要求填写《广东省哲学社会科学规划项目重要事项变更审批表》，及时报省社科规划专项小组审批。

5.项目成果的鉴定结项由省社科规划专项小组组织，实

行匿名鉴定制度。项目鉴定结项所需材料及装印要求，详见“广东社科规划”网站。

6.成果鉴定等级分为优秀、良好、合格和不合格四个等次。不合格者即未能通过结项，不予拨付预留经费。项目成果的最终鉴定等级均通过“广东社科规划”网站予以公布，并通知项目负责人所在单位。

以上规定，项目负责人及所在单位应严格遵守。如有异议，可不接受资助（在回执中注明），立项协议自行废止。

联系人：冯甜恬

电话：（020）83825078

地址：广州市天河北路 618 号广东社科中心 B 座 928

室

邮编：510635

广东省哲学社会科学规划专项小组

2023年6月28日



任务书编号：2025A04J4595

广州市科技计划项目 任务书

项目名称：	人机协同情景下绩效评估公平感知影响机制及提升策略研究
承担单位：	华南农业大学
项目负责人：	徐光毅
计划类别：	基础研究计划
专题名称：	2025年度基础与应用基础研究专题
支持方向：	青年博士“启航”项目
组织单位：	华南农业大学
起止时间：	2025-01-01 至 2026-12-31
主管处室：	引进智力管理处（科技人才处）

广州市科学技术局制

二〇二五年

填写说明

1. 任务书甲方为广州市科学技术局；乙方为项目承担单位；丙方为项目组织单位。

2. 任务书基于项目申报书转换而成，请按照“广州科技GI（广州科技大脑）”提示在线填写核实，若存在不填写内容的栏目，请用“无”表示；任务书中的单位名称应为规范全称，并与单位公章一致。

3. 乙方与合作单位的合作协议自动从项目申报书中读取，如需变化调整，须待任务书签订后，按要求及时办理重大变更。

4. 乙方完成项目任务书在线填写，依次提交丙方和甲方审核确认后，按要求完成签章。具备电子签章条件的单位，在“广州科技GI（广州科技大脑）”完成任务书签署；不具备电子签章条件的单位，经与业务主管处室沟通对接后，可下载电子版项目任务书用A4纸双面打印装订签章，一式六份报甲方和丙方签章，其中甲方两份丙方两份，项目承担单位和项目负责人各一份。

5. 涉密项目请在“广州科技GI（广州科技大脑）”下载项目任务书模板，按保密要求离线填写报送。

6. 项目申报书是项目任务书填报的重要依据，未经甲方许可，乙方不得修改考核指标，调整主要研究内容。项目任务书将作为项目实施管理、验收结题和监督评估的重要依据。

7. 项目任务书中的“备注”，包括重要的必须补充的内容。

8. “广州科技GI（广州科技大脑）”是项目管理过程中重要通知和文书的电子送达平台，电子送达与书面送达具有同等法律效力。为确保电子送达渠道畅通，乙方和项目负责人应及时更新维护“广州科技GI（广州科技大脑）”的单位和个人信息。

9. 项目涉及科技伦理、科技安全（如临床研究、生物安全、信息安全等）和科技保密相关问题的，申报单位须严格执行国家有关法律法规和伦理原则，完成相关审查工作；项目负责人在项目任务书签订环节，须提供符合国家有关法律法规和伦理准则要求的审查

批准文件，项目承担单位负责审核批准文件的真实性和有效性。

广州市科技项目任务书2024-12-31

一、项目基本信息

项目 基本 信息	项目名称	人机协同情景下绩效评估公平感知影响机制及提升策略研究
	申请市财政科技经费	5(万元)
	研究期限	2(年)
项目 摘要	针对当前日益盛行的算法决策以及算法决策诱发的公平悖论现象，围绕“算法介入的绩效评估公平感知”问题，本课题从“人机协同决策”视角剖析算法绩效评估公平悖论的根源、表现与破解机制。研究内容包括：基于算法-人类协同视角探讨算法介入的绩效评估的决策模式；根据归因理论视角剖析算法介入的绩效评估对个体公平感知的影响机制；基于算法与人类双向赋能视角揭示算法介入的绩效评估公平感知提升策略。	

二、项目单位情况

项目 承担 单位	单位名称	华南农业大学	统一社会信用代码	124400004554165634
	注册时间	1952-01-01	单位类型	高等院校
	注册地址	广东省广州市天河区五山路483号		
	办公地址 (联系地址)	广东省广州市天河区五山路483号		
	联系人	姓名	夏杰	
		手机号码	13711345768	
		电子邮箱	kjcgxk@scau.edu.cn	
	开户银行	广东广州工行五山支行		
	开户户名	华南农业大学		
银行账号	3602002609000310520			

注：如果办公地址（联系地址）等相关信息有变更，项目单位应当在变更之日起三个工作日内告知我单位变更后的地址。

三、项目负责人信息

姓名	徐光毅	证件类型	身份证
证件号码		性别	男
出生日期	1990-09-09	民族	汉族
国籍	中国	学历	博士研究生
学位	博士	学位授予国家 (或地区)	中国
职务	副系主任	职称	中级
所学专业	企业管理	手机号码	
办公电话	020-85283551	电子邮箱	xugy1990@163. com

四、项目经费信息

本项目总投入：¥（5）万元，其中，市财政科技经费：¥（5）万元，自筹经费：¥（0）万元。

经费下达计划			
资金来源	小计	市财政科技经费	自筹经费
2025	5	5	0
总计	5	5	0

（单位：万元）

注：本专题纳入“包干制”，市财政科技经费按市科技计划项目经费“包干制”相关规定执行。

五、预期代表性成果

项目负责人在项目实施期内，以该项目作为资助项目获得以下5种情形之一且经费使用符合规定的，由组织单位审核后通过验收。

（一）项目实施期内，以第一作者/通讯作者发表论文1篇或以上（须标注资助项目编号）；

（二）项目实施期内，以第一完成人申请或授权专利、软件著作权1项或以上；

（三）项目实施期内，获省级以上科技计划项目或人才项目支持1项或以上；

（四）项目实施期内，获省级以上科技奖励（含列入获奖团队成员名单）1项或以上；

（五）项目实施期内，获得职称晋升。

六、备注

专题补充约定条款：

甲方对未履行勤勉尽责义务的相关责任主体，自作出处理结论之日起，依照法律法规规定或任务书约定实施惩戒5年，取消相关责任主体申报市科技计划项目、申领市科技计划项目经费的资格。

预期代表性成果需在实施期内获得。

项目承担单位（乙方）及项目负责人承诺书

承诺书

本单位/本人作为广州市科技计划项目承担单位/项目负责人，将严格遵守广州市科技计划管理相关规定，严格履行自身责任，加强对项目组人员及合作单位的管理，在此郑重承诺：

（一）确保与本项目有关的全部材料真实、合法、有效，未侵犯其他方知识产权等权利，不存在多头申报、重复申报行为；

（二）严格遵守《广州市科技创新条例》《广州市科技计划项目管理办法》《广州市科技计划项目经费管理办法》《广州市科技计划科技报告管理办法》等相关规定，实施项目和经费管理；

（三）严格遵守国家、省、市关于科研诚信、科技伦理、科技安全（如临床研究、生物安全、信息安全等）和科技保密的有关法律、法规，相关政策以及各项规定，加强项目实施过程中的科研诚信、科技伦理、科技安全（如临床研究、生物安全、信息安全等）和科技保密管理，恪守科研道德准则。

如有违反，本单位/本人愿意接受相关部门做出的各项处理决定，包括但不限于终止项目、停拨经费、核减经费、追回经费，取消一定期限广州市科技计划项目申报资格，记入科研失信行为数据库，将不良行为向社会公开等。

项目承担单位：华南农业大学

日期：2024年12月24日

项目负责人：徐光毅

日期：2024年12月24日

电子送达确认书

告知事项	1. 为便于本项目承担单位（受送达人）及时收到相关通知和文书，请受送达人知悉项目管理过程中重要通知和文书（如：项目验收结果通知书、配合结余资金审计通知书、项目终止通知书等）的送达方式是通过“广州科技GI（广州科技大脑）”平台（以下简称平台）电子送达。 2. 确认的送达方式适用于行政执法全过程程序。 3. 请受送达人在项目管理过程中及时、主动查看平台相应模块，以免错过相关通知和文书。 4. 此电子送达方式，以发送方设备显示发送成功视为送达。但接收方证明其到达平台的日期与发送方对应系统显示发送日期不一致的，以受送达人证明到达平台的日期为准。
电子送达	受送达人同意：“广州科技GI（广州科技大脑）”是项目管理过程中重要通知和文书的电子送达平台，电子送达与书面送达具有同等法律效力。为确保电子送达渠道畅通，受送达人同意“广州科技GI（广州科技大脑）”作为电子送达平台。 “广州科技GI（广州科技大脑）”网站地址：https://gzsti.gzsi.gov.cn。
受送达人确认	我单位已阅读本确认书的告知事项，接受并确认了上栏送达方式。 受送达人：华南农业大学 <u>2024年12月24日</u>
备注	

任务书签署

甲乙丙三方根据《广州市科技计划项目管理办法》《广州市科技计划项目经费管理办法》《广州市科技计划科技报告管理办法》等有关文件规定，以及有关法律、政策和管理要求，签署本任务书。

签订地点：广州市越秀区

广州市科学技术局（甲方）：广州市科学技术局
局项目经办人：陈良 联系电话：83124036
责任处室负责人：洪雪妍

2024年12月31日

项目承担单位（乙方）：华南农业大学
二级部门：华南农业大学经济管理学院
项目负责人：徐光毅
项目经费汇入账号
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论文、咨询报告

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根据委托人提供的论文材料，委托人华南农业大学经济管理学院 徐光毅(学科类型:人文社科) 9 篇论文收录情况如下表。

序号	论文名称	发表刊物及发表的年月卷期/页码等	作者排名	论文等级	作者文中单位	收录情况	影响因子	中科院大类分区信息
1	Troops are Business Schools: Military Service and Entrepreneurial Behaviors in China	ENTREPRENEURSHIP THEORY AND PRACTICE 出版年: 2025 出版日期: JAN 卷期: 49 1 页码: 30-59 文献类型: Article	通讯作者	A 类	华南农业大学 经济管理学院	SSCI	IF2-year=7.9 IF5-year=12.8 (2024)	管理学 2 区 Top 期刊: 否 OA 期刊: 否 (2025)
2	Barriers to electric vehicle battery recycling in a circular economy: An interpretive structural modeling	JOURNAL OF CLEANER PRODUCTION 出版年: 2024 出版日期: SEP 1 卷期: 469 页码: - 文献号: 143224 文献类型: Article	通讯作者	T2 类	华南农业大学 经济管理学院	SCI	IF2-year=10.0 IF5-year=10.7 (2024)	环境科学与工程 1 区 Top 期刊: 是 OA 期刊: 否 标注: Mega-Journal (2025)
3	Within-group differences: Differentiated Chinese expatriate-HCN interactions and the influence of human resource management practices	INTERNATIONAL BUSINESS REVIEW 出版年: 2025 出版日期: AUG 卷期: 34 4 页码: -	通讯作者	A 类	华南农业大学 经济管理学院	SSCI	IF2-year=6.1 IF5-year=8.2 (2024)	管理学 2 区 Top 期刊: 是 OA 期刊: 否 (2025)

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1	夹缝求生: 矛盾视角下非体面工作从业者 矛盾职业认同动态演化过程研究	南开管理评论 出版年: 2024 出版日期: 卷期: 27 5 页码: 78-88 文献号: 文献类型: 期刊论文	通讯作者	A 类	华南农业大学 经济管理学院	CSSCI	无	无	无
5	悖论视角下非体面工作感知对冲突体验及 矛盾职业认同的影响	管理学报 出版年: 2023 出版日期: 卷期: 20 4 页码: 512-520 文献号: 文献类型: 期刊论文	通讯作者	A 类	华南农业大学 经济管理学院	CSSCI	无	无	无
6	主动抑或回避? 多重支持资源对非体面工 作感知与矛盾职业认同的影响机制研究	商业经济与管理 出版年: 2024 出版日期: 卷期: 1 页码: 37-52 文献号: 文献类型: 期刊论文	通讯作者	B 类	华南农业大学 经济管理学院	CSSCI	无	无	无

7	Reporting good news but not bad: the dual effect of employee stewardship behavior on work-family interface	CHINESE MANAGEMENT STUDIES 出版年: 2024 出版日期: NOV 21 卷期: 18 6 页码: 1880-1897 文献类型: Article	共同通讯作者 (倒数第一)	B类	华南农业大学 经济管理学院	SSCI	IF2-year=2.3 IF5-year=2.7 (2024)	管理学 4区 Top 期刊: 否 OA 期刊: 否 (2025)
8	Influence of employees' perception of digital transformation meaning on work engagement and well-being	SOCIAL BEHAVIOR AND PERSONALITY 出版年: 2023 出版日期: SEP 卷期: 51 9 页码: - 文献号: e12623 文献类型: Article	通讯作者	B类	华南农业大学 经济管理学院	SSCI	IF2-year=1.0 IF5-year=1.5 (2023)	心理学 4区 Top 期刊: 否 OA 期刊: 否 (2023)
9	非体面工作者矛盾职业认同的转化机制及其对职业转换意愿的影响研究	中国人力资源开发 出版年: 2023 出版日期: 2023-10-15 卷期: 40 10 页码: 20-32 文献号: 文献类型: 期刊论文	通讯作者	C类	华南农业大学 经济管理学院	北大核心	无	无

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and Wenjun Cai¹

Abstract

Although research has examined the benefits of military service and the impact of military executives on business operations, the relationship between military service and entrepreneurial behavior remains poorly understood. Using the instrumental variable approach and a nationally representative male sample from the China Labor-forces Dynamic Survey, we discovered that military service significantly increased the probability of entrepreneurship in China, even after a series of robustness checks. Mechanism tests indicated that this positive effect could be explained by human and political capital accumulation, military-related social capital formation, and risk appetite traits. Our supplemental analyses demonstrated that exogenous shocks from the special military-in-business policy strengthened the positive entrepreneurial effect, whereas the higher education expansion policy and China's accession to the World Trade Organization weakened this effect. Additionally, military entrepreneurs had better business performance and more resilient, persistent, and confident traits. We found no evidence that Chinese veterans were forced to become entrepreneurs. This study enriches research on the styles and traits of military entrepreneurs and managers and provides important insights for assessing and improving veteran welfare policies in China and other developing countries.

Keywords

military service, entrepreneurial behaviors, military entrepreneurs, China

Introduction

Entrepreneurship is a vital engine of social progress and plays a crucial role in promoting innovation, employment, and economic development. Given the range of positive impacts of entrepreneurship, scholars have expressed strong interest in its antecedents and the

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mechanisms that motivate such behavior (Mmbaga et al., 2020; Xie et al., 2021; Zhao & Li, 2022). According to Djankov et al. (2006), the key motivators of entrepreneurship can be categorized into macroenvironmental, sociological, and individual characteristics. Among entrepreneurial characteristics, studies have primarily focused on demographic factors (Brown et al., 2021; Rosenthal & Strange, 2012), work experience (Chatterjee et al., 2022; Iversen et al., 2016), and personal traits such as the need for achievement, risk attitudes, and self-confidence (Johnson et al., 2018; Kraft et al., 2022; Putninš & Sauka, 2020). Some studies show that prior special experiences may also affect entrepreneurial behaviors (e.g., Cheng et al., 2021; Démurger & Xu, 2011; F. Qin et al., 2017; Zhao & Li, 2022). This study investigates the determinants of entrepreneurial behaviors by considering a particular type of personal experience: military service.

Military entrepreneurs and executives are increasingly common in China (Gao et al., 2021; Guo et al., 2020; Luo et al., 2017; Xu et al., 2022; Z. Zhang et al., 2022). Numerous famous entrepreneurs, such as Zhengfei Ren, founder of Huawei, the world's largest telecommunications equipment manufacturer, have military backgrounds. According to imprinting theory, as a special life experience, military service may significantly affect individuals' thinking patterns and behavioral decisions (Gao et al., 2021; Heinz et al., 2017; Z. Zhang et al., 2022). For instance, Gao et al. (2021) found that firms with military chief executive officers (CEOs) take on more social responsibility for environmental protection because military services instill prosocial values such as duty, self-discipline, and a sense of community. Studies have also examined the benefits of military service on physical and mental health (McLaughlin et al., 2008; Zhao et al., 2023), cognitive and non-cognitive abilities (Benmelech & Frydman, 2015; Eynde, 2016; Hou et al., 2020), and social networks (Laanapere et al., 2018; C. Zhang, 2015). Therefore, those with military service are more likely to accumulate human and social capital. Additionally, entrepreneurs tend to acquire material and non-material supports through military social networks (Hou et al., 2020; Linda, 2009). Based on the role of military service in people's decision-making and personal development, we infer that military service contributes to entrepreneurial success.

Related literature can be categorized into two streams. The first stream focuses on assessing the effect of military service on socioeconomic status, such as income, employment, health, and well-being (e.g., Angrist, 1990; Angrist & Krueger, 1994; Hou et al., 2020; Zhao & Guo, 2022). However, some scholars disagree about the welfare effects of military experience. The most representative literature emerges from scholars who found positive rewards for American youth who were enlisted during the World War II (e.g., Angrist & Krueger, 1994; De Tray, 1982; MacLean & Kleykamp, 2021). However, this changed during the Vietnam War: military service resulted in an earnings penalty (e.g., Angrist, 1990; Rosen & Taubman, 1982; Teachman & Call, 1996). Moreover, evidence from the United Kingdom and Germany suggests that the positive effects of military service are negligible (Bauer et al., 2012; Grenet et al., 2011). Imbens and van der Klaauw (1995) find that Dutch military service lowers post-discharge earnings. Recent research on Chinese veterans suggests declining socioeconomic status and life satisfaction (Diamant & O'Brien, 2015; Zhao & Guo, 2022), others reveal an income premium for military service, particularly for rural families (Hou et al., 2020; C. Zhang, 2015). Thus, we explored the living status of veterans in China, which is closely related to entrepreneurial behavior and business performance.

The second stream of the literature on military service is management, where scholars have focused on the impact of military executives on business operations (e.g., Benmelech & Frydman, 2015; Gao et al., 2021; Luo et al., 2017; Malmendier et al., 2011; Z. Zhang et al., 2022). Research focuses on the personal traits and management styles of military

executives. For instance, based on risk attitudes, military executives may tend to be aggressive (Guo et al., 2020; Malmendier et al., 2011; Wansink et al., 2008) or conservative (Bamber et al., 2010; Benmelech & Frydman, 2015). Additionally, debates continue on whether military executives are overconfident (Malmendier et al., 2011). These characteristics affect entrepreneurial behavior in various ways (de Blasio et al., 2021; Gu & Qian, 2019; Kihlstrom & Laffont, 1979; F. Zhang et al., 2021). Notwithstanding widespread scholarly interest in the impact of military executives in the unique context of entrepreneurship in China, little is known about how military service translates into entrepreneurial behavior.

Furthermore, recent studies focus on the entrepreneurial effects of military service from different perspectives (Kerrick et al., 2014; Polin & Ehrman, 2020; H. Wang et al., 2023; Xu et al., 2022). For example, Kerrick et al. (2014) evaluated the effects of an entrepreneurship training program on military veterans' entrepreneurial passion and networking frequency. Xu et al. (2022) highlighted that military entrepreneurs have a strong sense of self-sacrifice and can better participate in poverty reduction entrepreneurship. However, these studies do not provide direct evidence on whether military service influences entrepreneurial choices. Additionally, while extensive research implies that military service is likely to be associated with successful entrepreneurship (e.g., Eynde, 2016; Malmendier et al., 2011; Polin & Ehrman, 2020; Wen et al., 2023; C. Zhang, 2015), other studies suggest that military service inhibits survival entrepreneurship by increasing employment opportunities in state-owned units (H. Wang et al., 2023). Under China's current military service system, only a few retired military officers are entitled to job placement after reaching the required number of years of service. Ordinary conscripts do not work in the public sector after discharge. Local governments and the military encourage them to find jobs or engage in entrepreneurship. In addition to differences in research perspectives, the conflicting findings may be because underlying endogeneity issues are not well addressed, given the non-random nature of military service (e.g., Angrist, 1990; Bedard & Deschênes, 2006; Benmelech & Frydman, 2015). Valid causal inferences can assist us in identifying the potential entrepreneurial traits of Chinese veterans and assessing the welfare status of military entrepreneurs. This can provide more useful insights for policies to promote veterans entrepreneurship.

In China, without universal mandatory military service, two selection effects influence causality estimates: self-selection, where individuals choose military service based on personal traits, family circumstances, and societal factors.¹ The second is the troop-screening effect. Only individuals who undergo physical examinations and political screenings are likely to be enlisted in China's military (Hou et al., 2020; Zhao & Guo, 2022). Therefore, considerable heterogeneity may exist between veterans and non-veterans. Drawing on previous literature (e.g., Angrist, 1990; Bedard & Deschênes, 2006; Hou et al., 2020; Johnston et al., 2016), we utilized the instrumental variable (IV) method to identify the causal relationship between military service and entrepreneurial behavior in China. Our main IV was the childhood experience of the 1998 China Floods, one of the most significant disasters in China over the past 30 years. The Chinese military played an irreplaceable and vital role in combating such large natural disasters (Chen, 2016). The image of Chinese soldiers as fearless in fighting floods and protecting disaster victims was deeply rooted in the hearts of people, which may have inspired children to join the army.² Moreover, although natural disasters occur randomly (de Blasio et al., 2021), given their possible association with entrepreneurial behaviors (Boudreaux et al., 2022; Dutta, 2017), we conducted several exclusion restriction tests to ensure the reliability of the IV (Acemoglu et al., 2001; Miguel et al., 2004).

Considering the small proportion of women in the Chinese army (Hou et al., 2020; C. Zhang, 2015; Zhao & Guo, 2022), we used a nationally representative male sample from the China Labor-forces Dynamics Survey (CLDS) in the main specification. Military service significantly boosts entrepreneurial behavior and is driven by enhanced human and political capital, military-related social capital, and risk appetite. Exogenous shocks, like the military-in-business (MIB) policy, strengthen this effect, while policies such as higher education expansion and World Trade Organization (WTO) accession weaken it. However, no evidence exists that Chinese veterans are forced to engage in entrepreneurship. Conversely, veteran entrepreneurs are more likely to become employers, engage in formal entrepreneurship, and earn a higher business income. Together, from the perspective of entrepreneurial behavior, our estimates support the perspective that Chinese veterans have better socioeconomic status and greater risk appetite traits.

Our contributions to the literature are fourfold. First, this study expands the literature on the role of early life experiences in economic behaviors. The effect of military service on CEO behavior has been widely studied (Benmelech & Frydman, 2015; Gao et al., 2021; Guo et al., 2020; Malmendier et al., 2011; Xu et al., 2022; Z. Zhang et al., 2022). However, the effect of this special experience on career choice behaviors remains largely unexplored. Considering the imprinting effects of military service, our study contributes to the literature by investigating the relationship between military service and entrepreneurial behavior. Second, we provide new evidence on the factors influencing entrepreneurial choices. We indicate that a particular type of personal experience—military service—substantially affects entrepreneurial behaviors. Thus, we enrich an important category of the entrepreneurship literature and reveal the effect of personal experience on entrepreneurial behavior (e.g., Cheng et al., 2021; Démurger & Xu, 2011; F. Qin et al., 2017; Salvato et al., 2020; Zhao & Li, 2022). Third, we elucidate the mechanisms by which military service influences entrepreneurial participation, which has been neglected in the previous literature (Kerrick et al., 2014; Polin & Ehrman, 2020; Xu et al., 2022). Military service enhances human, social, and political capital, along with risk tolerance. This study offers fresh insights into military service's positive effects on entrepreneurship in China, highlighting mechanisms behind these effects. Last, the socioeconomic status of Chinese veterans lacks consistent findings in existing literature (e.g., Hou et al., 2020; H. Wang et al., 2023; Wen et al., 2023; C. Zhang, 2015). Based on the IV approach, we demonstrate the welfare effect and the reality that military services create more advantages for entrepreneurship in China. This study offers novel and robust evidence for this positive effect.

Theoretical Mechanisms and Hypothesis Development

Here, we explore the potential underlying mechanisms, including human capital, social capital, political capital, and risk attitude, which may explain why military service affects entrepreneurial behavior.

Human Capital

Military service boosts human capital through improved physical fitness, beneficial for entrepreneurship. Studies show it fosters healthy lifestyles among veterans, enhancing their overall well-being (MacLean & Elder, 2007). The overall physical health of veterans is generally improved by military science-based training and medical care, which is referred to as the “healthy soldier effect” (McLaughlin et al., 2008; Zhao et al., 2023). Additionally,

military members frequently have better access to social benefits and medical resources after retirement, which may enhance their health status (Angrist, 1998). Being physically fit makes it easier to engage in entrepreneurship (Hatak & Zhou, 2021; Nikolova, 2019).

Second, military service can also contribute to mental health. Under the military training system, military service imprints a strong sense of integrity, loyalty, self-sacrifice, and confidence (Benmelech & Frydman, 2015). Some psychologists have investigated personal traits associated with military service, such as self-discipline, resilience, and risk-taking (Elbogen et al., 2013; Malmendier et al., 2011). Additionally, studies have shown that early military experience shapes CEOs' psychological characteristics, such as risk appetite and overconfidence, enabling them to make judgments with ease under pressure or during crises (Benmelech & Frydman, 2015; Koch-Bayram & Wernicke, 2018). Therefore, we infer that military entrepreneurs are better prepared to manage the demanding or risky situations that arise during the entrepreneurial process.

Third, numerous scholars have emphasized the positive effects of military service on individual skills and cognitive abilities (e.g., Angrist et al., 2011; Bound & Turner, 2002; Hou et al., 2020). Although individuals are removed from the formal education system upon enlistment, they acquire a wide range of military and non-military skills through military training (Bauer et al., 2012; Eynde, 2016). These training practices provide a solid foundation for veterans to pursue entrepreneurship (Unger et al., 2011). Additionally, the military offers continuous training programs and conducive learning environments that enhance individuals' cognitive abilities (Eynde, 2016; Hou et al., 2020). Veterans have preferential access to vocational training, which may help them engage in entrepreneurial behavior. Based on this discussion, we propose the following hypothesis:

Hypothesis 1: *Military service is positively associated with entrepreneurial behaviors due to enhanced human capital.*

Social Capital

Social capital involves membership in a group that collectively owns resources. Entrepreneurship heavily relies on social capital, necessitating entrepreneurs to cultivate diverse social resources and maintain strong relationships (Estrin et al., 2013). In relational societies like China, social capital derived from networks and trust is vital (C. Wang et al., 2015), enhancing entrepreneurs' success rates (Klyver & Arenius, 2022). Notably, overcoming credit constraints is a significant challenge in entrepreneurship (Hurst & Lusardi, 2004). The informal credit offered by social networks alleviates credit constraints in entrepreneurship, a vital aspect in China, where formal financial exclusion is prevalent (Kinnan & Townsend, 2012). In addition to financial support, social networks aid information- and knowledge-sharing, which can reduce information asymmetry and provide entrepreneurs with access to additional market information and opportunities (Gu & Qian, 2019; Kinnan & Townsend, 2012).

In addition to civilian social capital, veterans have ample military social capital (Laanepere & Kasearu, 2021). Military units offer great potential for creating high-value and easily convertible military-related social capital. Thus, individuals with military service tend to have better access to high-quality and plentiful military-related social capital than civilian-related social capital (Laanepere et al., 2018). Veterans can form close ties with their comrades, officers, and fellow veterans, thereby creating military social networks (Hou et al., 2020). These networks offer veterans crucial information channels and

practical experience in entrepreneurship (Linda, 2009). Lengthy collective experiences in military service foster strong emotional bonds among service members, reinforcing veterans' military-related social networks and signaling positively in the entrepreneurial market (De Tray, 1982; Hou et al., 2020). However, extended military engagement can diminish connections to local social networks, potentially reducing civilian-related social capital, including support from family, friends, and colleagues (Zhao & Guo, 2022). Several studies have demonstrated that military service may negatively affect family relationships and marriage (e.g., Heerwig & Conley, 2013; Zhao & Guo, 2022). Therefore, we derived the second hypothesis as follows:

Hypothesis 2: *Military service is positively associated with entrepreneurial behaviors because of sufficient military-related social capital rather than civilian-related social capital.*

Political Capital

Political capital is another route to entrepreneurship, in addition to human and social capital. Evidence suggests that political capital can affect individuals' entrepreneurial actions in transitional countries (Brown et al., 2021; Zhou, 2009). Entrepreneurs leveraging political capital gain advantages beyond monetary returns, accessing policy insights, public resources, and social connections (Z. Liu, 2003). They excel in building networks facilitating information and resource acquisition. The institutional environment crucially supports the utilization and sustainability of political capital in entrepreneurial endeavors (Wei, 2022). Owing to China's ongoing market imperfections and the prevalence of government interference in business operations, entrepreneurs frequently spend considerable time and effort dealing with the government (Jia et al., 2021). Importantly, the cost of financing through official channels is high in China's underdeveloped capital markets (J. Zhang & Wong, 2008). However, those with political influence tend to acquire credit (Shi, 2022), which increases the likelihood of entrepreneurship.

Numerous studies have emphasized that the military has strong political attributes and that military service helps veterans accumulate political capital. Increasing political consciousness among military personnel and providing them with political training are particularly important for some recruits (Leal, 1999). In China, military personnel are educated extensively in military political knowledge, developing political literacy to cultivate their loyalty to the country and army and to create a sense of service to the party, country, and people. Thus, military service is frequently considered a quasi-political credential in China (Hou et al., 2020). Veterans receive additional political resources because of their military status, which in turn translates political capital into commercial advantages (Li et al., 2007). Additionally, the Chinese government has encouraged veterans to engage in entrepreneurship to reduce resettlement pressures. Government-led special support programs, such as credit support, tax incentives, and entrepreneurial training, are integral components of veterans' political capital (Zhao & Guo, 2022). Based on this discussion, we propose the following hypothesis.

Hypothesis 3: *Military service is conducive to entrepreneurial behaviors because of the advantages of political capital.*

Risk Attitude

We also examined the mechanisms of risk attitudes. The imprinting theory indicates that experiences in a sensitive period, such as military service during youth, may shape individuals' personality traits, values, and behaviors (Benmelech & Frydman, 2015; Guo et al., 2020; Luo et al., 2017). Under the influence of long-term strict training and education in the army, soldiers have gradually developed qualities suitable for thriving in the army environment (H. Wang et al., 2023). Generally, people tend to exhibit a high level of risk-taking and can handle high-risk situations after experiencing military life (Malmendier et al., 2011; Wen et al., 2023). The high degree of heroism cultivated by the army leads to veterans' risk-seeking characteristics. They are confident in addressing highly stressful situations because of the military's promotion of risk-taking and hustle-loving attitudes (Guo et al., 2020; Wen et al., 2023). Thus, veterans typically have a good spirit of risk-taking amidst the uncertainty related to entrepreneurship (Heinz et al., 2017). Several management studies support the notion that ex-military CEOs frequently exhibit a high appetite for risk when making decisions and that their enterprises are more likely to have greater financial leverage (Guo et al., 2020; Malmendier et al., 2011). Thus, military service and risk appetite formation may be strongly associated.

Post-retirement, the risk tolerance developed during military service persists and shapes entrepreneurial behavior. Entrepreneurship demands risk acceptance due to market uncertainties. Studies consistently link entrepreneurship with risk-taking; Kihlstrom and Laffont (1979) suggested risk-averse individuals opt for employment, while those less risk-averse pursue entrepreneurship. Subsequent research has shown that a risk-taking mindset can promote entrepreneurial zeal (e.g., de Blasio et al., 2021; Moss et al., 2015; Vereshchagina & Hopenhayn, 2009). Other studies emphasize the benefits of entrepreneurial risk-taking, such as scale expansion, enhanced innovation, and long-term performance (Putninš & Sauka, 2020; Rank & Strenge, 2018). Similarly, we believe that the risk-seeking characteristics of individuals trained by the army encourage entrepreneurial behavior. Therefore, we propose the following hypotheses:

***Hypothesis 4:** Individuals with military service are likely to be entrepreneurs because they tend to have higher risk preferences.*

Data and Variables

Data Source

Data were sourced from two waves of the CLDS. This large, nationally representative micro-survey was conducted by the Center for Social Survey at Sun Yat-sen University in 2016 and 2018.³ In the 2016 wave, the sample covered 29 provinces in China, including 401 villages and communities, 14,226 households, and 21,086 individuals (10,022 males). The 2018 wave included 7,864 male respondents. In addition to its main focus on the status and transition of the Chinese labor force, this database offers comprehensive information on entrepreneurial behaviors (C. Y. Liu et al., 2019; F. Zhang et al., 2021) and military service.⁴ Specifically, the CLDS provides the specific year of veteran enlistment and retirement, allowing us to use exogenous shocks to observe changes in the entrepreneurial effect of military service. Thus, the CLDS offers the advantage of analyzing the effect of military service on entrepreneurial behaviors in China. Moreover, the military is predominantly male,⁵ and female observations are typically disregarded in prior literature (e.g., Angrist,

1990; Johnston et al., 2016; C. Zhang, 2015; Zhao & Guo, 2022); therefore, we considered only the male sample in the main results.

Variables

Entrepreneurial Behaviors. In the CLDS database, respondents' employment status was divided into five categories: employee, self-employed, employer, farming, and jobless. Following previous literature (e.g., Cheng et al., 2021; C. Y. Liu et al., 2019; F. Zhang et al., 2021; Zhao & Li, 2022), we considered those who are currently self-employed and employers as entrepreneurs and set the explained variable *Entrepreneurship* to 1. All other statuses were regarded as non-entrepreneurship and set to 0. Additionally, the CLDS database provides information on past entrepreneurial behavior. We analyzed the entrepreneurial effects of military service, which should not be limited to entrepreneurial behavior during the survey period. Therefore, *Past entrepreneurial behaviors* was considered the main alternative explained variable. Supplementary data on entrepreneurial outcomes, including income, startup frequency, and intentions, are analyzed to enhance our understanding of how military service influences entrepreneurial outcomes in China.

Military Service. The explanatory variable, *Military*, was measured by whether the respondent had military service. Following previous literature (e.g., Angrist, 1998; Bedard & Deschênes, 2006; Benmelech & Frydman, 2015; Wen et al., 2023), if the respondent had been in the military, *Military* was set to 1 and 0 otherwise. Since 1949, China has experienced disarmament and small-scale conflict. Such changes in nationally induced military requirements imply that the likelihood of individuals enlisting differs across the years. Supplemental Figure A1 depicts the proportion of military service for different birth cohorts, based on the CLDS database.

As aforementioned, the CLDS surveys veterans' years of enlistment and discharge. This information allowed us to determine the age at enlistment and discharge and the number of years of service. Considering that length of service is closely associated with the job placement benefits received by veterans in China, we can distinguish between the potential heterogeneous effects of the job placement policy on veteran entrepreneurship. This information also facilitated our analysis of the moderating effects of exogenous shocks on veterans' entrepreneurial behavior. Supplemental Figures A2 and A3 illustrate the military service ratio and male military entrepreneurs by years of enlistment and retirement, respectively.

Instrumental Variable. As mentioned above, the IV was the childhood experience of the Chinese floods in 1998. In contrast to infancy (0–5 years), childhood and adolescence are critical periods for the retention of permanent memories and character formation (Usher & Neisser, 1993). Thus, childhood is defined as the period between the ages of 6 and 17. Although 29 provinces were affected by the floods, Jiangxi, Hunan, Hubei, and Heilongjiang were the most affected provinces. Therefore, the assignment rules for our IV, *China Floods in 1998*, were as follows. A value of 1 was assigned if the respondent resided in one of the four disaster-affected provinces and was between the ages of 6 and 17 years during the floods, and 0 otherwise.

Control Variables. Controlling for individual and family characteristics helps mitigate the selective bias of military service, particularly concerning pre-enlistment exogenous variables (Hou et al., 2020; Zhao & Guo, 2022). Specifically, we controlled for age, schooling,⁶ *hukou* at birth,⁷ parents' education and occupation (e.g., farmers or military personnel), parental marital status during childhood, and siblings. These variables may be related to individuals' decisions to join the military. For example, a parent's military service is likely to influence their child's military intentions and current entrepreneurial behaviors. Intergenerational career transmission is particularly prevalent in China. Controlling for these factors would help us accurately determine the causal effects between military service and entrepreneurial behavior. Supplemental Table A1 provides pertinent definitions of the above variables.

Mediating Variables. Several mediating variables were selected from the CLDS database. First, based on the health and skills dimensions, we selected six human capital variables: *self-rated health*, *hurt*, *chronic diseases*, *mental health impairment*, *professional certificates*, and *entrepreneurial training*. The second category measured social capital and included *local friends with lending money*, *social interaction*, and *introducing business from comrades-in-arms*. The first two measured civilian-related social capital, while the third served as a proxy for military-related social capital. Third, three variables were used to measure political capital: *party membership*, *previous employment in government sectors*, and *policy support*. Finally, *commercial insurance* and *risky financial assets* were constructed as proxy variables for risk preference. Specific definitions and descriptions are presented in Supplemental Table A2.

Descriptive Statistics

Supplemental Table A3 presents the descriptive statistics for the main variables. After cleaning and screening, the final sample consisted of 12,889 male observations. Approximately 6.20% of the respondents had military service experience, and 15.05% were currently engaged in entrepreneurship. Standard *t*-tests suggested differences between veterans and non-veterans. A total of 18.40% of veterans and 14.83% of non-veterans engaged in entrepreneurship, with significantly different mean values. This preliminarily suggests that veterans are more likely than non-veterans to engage in entrepreneurship, implying the positive entrepreneurial effects of military service in China. Subsequently, veterans' past entrepreneurial behaviors and future entrepreneurial intentions were greater than those of their non-veteran counterparts. The average age of veterans who joined the military was 18.8197 years, the average age of service was 5.0814 years, and the average years of enlistment and discharge were 1986 and 1989, respectively. The *t*-test statistics for most of the control variables are statistically significant, further indicating that controlling for these variables is necessary to mitigate potential endogeneity.

Supplemental Table A2 compares the differences in means of the mediating variables between veterans and non-veterans. Regarding human capital, veterans have better physical and mental health and higher rates of professional certification and entrepreneurial training. *T*-test statistics revealed that, compared to non-veterans, veterans had a higher average self-rated health score of 0.2781 points, lower mean mental health impairment index of 0.7844 points, and higher percentage points of 6.91 and 6.90 in professional certificates and entrepreneurial training experience, respectively. The results in Panel B show that veterans have better military-related social capital but are not at a disadvantage concerning civilian-related social capital. Regarding political capital, the proportion of

veterans with party membership was 43.80 percentage points higher, the proportion of those with government sector employment experience was 7.49 percentage points higher, and the proportion of those enjoying entrepreneurial policy support was 26.29 percentage points greater. These observations strongly support the political capital accumulation effect of military service. Finally, the *t*-tests implied that the veterans had a stronger risk appetite. Additionally, supplemental Table A4 presents the correlation coefficients of the explained, explanatory, and control variables. We discovered that the coefficient between *Military* and *Entrepreneurship* is positive and significant, providing preliminary evidence for our inferences.

Endogeneity and Methodology

To accurately capture the causal relationship between military service and entrepreneurial behavior, sufficient attention must be paid to potential endogeneity issues. Military service has two selection effects. On the one hand, because military enlistment is not mandatory for all male citizens in China (unlike South Korea and Singapore), joining the military is self-selective for individuals (Zhao & Guo, 2022; Zhao et al., 2023). Enlistment decisions were related to physical fitness, family economic status, and personality traits. For instance, previous literature suggests that, in China, rural individuals with poorer family economic status are more likely to enlist access to more social resources (Hou et al., 2020; C. Zhang, 2015). Additionally, individuals with aggressive personalities and risk preferences may have a greater willingness to join the military (Callen et al., 2014). Both initial family economic status and risk preferences are closely related to current entrepreneurial behaviors (Kihlstrom & Laffont, 1979; Kraft et al., 2022; Zhao & Li, 2022).

On the other hand, troop selection behavior may also interfere with our estimates because of strict screening mechanisms for military personnel (Hou et al., 2020). Generally, conscripts with better physical conditions, higher political literacy, and who fulfill special military requirements are more likely to pass medical examinations and tests (Hou et al., 2020; McLaughlin et al., 2008; C. Zhang, 2015). Consequently, they are more likely to successfully enter the military as soldiers. If individuals who meet the enlistment criteria have greater entrepreneurial intentions and capabilities (e.g., greater risk appetite, better physical fitness, and better political literacy), using the ordinary least squares (OLS) approach may lead to a bias in the estimates.

To mitigate the bias introduced by these selection effects, we attempted to control for some individual and family factors before joining the military, as shown in Supplemental Table A1. However, we could not fully control these variables because of the availability of data and information. Thus, we used an IV approach to further mitigate these endogeneity issues. Some related studies have focused on quasi-natural experiments of draft lotteries to select IVs (e.g., Angrist, 1990; Angrist & Krueger, 1994; Bauer et al., 2012; Card & Lemieux, 2001; Johnston et al., 2016), whereas others have captured exogenous variations in military service at the birth cohort level (Bedard & Deschênes, 2006; Hou et al., 2020; Imbens & van der Klaauw, 1995; Zhao & Guo, 2022). However, similar quasi-natural experiments in the Chinese context are lacking. Studies have implied that birth cohorts are closely related to entrepreneurial behavior (Cheng et al., 2021; Marquis & Qiao, 2020). By contrast, we considered natural disasters as a direction for selecting potentially plausible IVs (de Blasio et al., 2021).

During peacetime, the military assumed a role in maintaining social stability. In China, the military is an indispensable force in the fight against natural disasters (Chen, 2016).

Thus, natural disaster experiences and individual enlistment decisions may be related to the unique Chinese context. Specifically, the main IV was the childhood experience of flooding in China in 1998. Regarding correlation, individuals who experienced the floods during childhood were likely to have been rescued by the military during the disaster, which may have inspired them to join the military. As emphasized earlier, the Chinese floods of 1998 were one of the most widespread natural disasters in China, and Chinese soldiers sacrificed their lives to save people's lives and property. Military heroes involved in flood relief have earned widespread respect and emulation, particularly among children. Childhood and adolescence represent critical stages for recognizing and understanding the world, preserving permanent memories, and forming character (Usher & Neisser, 1993). Consequently, individuals at these stages are more likely to join the military in adulthood to help disaster victims because of their role-modeling and recognition effects.

Under the assumption of exclusion, natural disasters occur naturally and randomly. The 1998 China Floods were a force majeure event for individuals. However, floods unexpectedly create exogenous shocks to children's decisions to join the military during adulthood. Nevertheless, as noted in the literature, one potential threat is the link between natural disasters and entrepreneurship (Boudreaux et al., 2022; Dutta, 2017; Salvato et al., 2020), which may result in the IV being insufficiently exogenous. This concern was ruled out in two ways. First, some scholars have found that the entrepreneurial effects of natural disasters are short-term (e.g., 1–2 or 1–3 years) and do not exist in the long run (Boudreaux et al., 2023; Oh & Oetzel, 2011). Additionally, some studies have argued that this effect relies on other external characteristics or conditions, such as foreign aid or the quality of governance (Boudreaux et al., 2022, 2023). This implies that childhood experiences of natural disasters may not exert a lasting influence on entrepreneurial behaviors in adulthood. Thus, theoretically, these studies support our conclusions regarding the exogenous nature of IV.

Second, we attempt to eliminate the possibility that IV influences entrepreneurial behavior through other paths. As shown in column (1) of Supplemental Table A5 in the Appendix, the coefficient of IV *China Floods in 1998* is statistically insignificant, implying that this IV is likely to affect entrepreneurial behavior only through military service after adding baseline controls. Moreover, following Acemoglu et al. (2001) and Miguel et al. (2004), we excluded other potential paths for this IV to affect entrepreneurial behaviors and satisfy the exclusion restriction constraint. Considering that studies have shown that natural disasters may indirectly affect entrepreneurial behaviors through three main channels—human capital, physical capital, and risk preferences (Bernile et al., 2017; Boudreaux et al., 2022; de Blasio et al., 2021), we further regressed IV on these variables based on the CLDS database. Columns (2) to (9) of Supplemental Table A5 reveal that the coefficients of IV remain non-significant, except for column (2). This suggests that, apart from education, the childhood experience of the Chinese floods in 1998 was also statistically uncorrelated with other variables related to human capital, physical capital, and risk appetite. As shown in Supplemental Table A2, education was adequately controlled for in this study. Based on theoretical and statistical evidence, we proved that this IV satisfies the exclusion restriction constraints. Thus, we are confident in the reliability of causal identification within the framework of IV estimations, as evident in the empirical results (Young, 2022).

Another potential threat is selectivity in reporting military service information. As shown in Supplemental Table A3, not all veterans reported their years of enlistment or retirement. Thus, we are concerned about whether an incentive exists for selective

disclosure. Therefore, self-reported military information may be influenced by the respondents' current occupation and income status, particularly their entrepreneurial behavior. This adverse selection process may have led to endogeneity. To address this potential threat, we empirically tested whether current entrepreneurial status and income affect self-reported military service information using a military subsample. As shown in Supplemental Table A6, none of the coefficients of the main variables are significant in either panel. These results ensured data quality and ruled out the special self-selection problem.

To clarify the causal relationship between military service and entrepreneurial behavior, we employ an endogenous bivariate probit model (EBPM) with the IV in the baseline results. This is because our primary explanatory and explained variables are dummies in the main specifications (Han & Vytlačil, 2017). Consequently, we generated the mixed-process recursive model shown below, which incorporates probits for both entrepreneurship and military service.

$$\text{Entrepreneurship}_{it}^* = \alpha_0 + \alpha_1 \text{Military}_{it} + \alpha_2 X_{it} + \lambda_p + \theta_t + \mu_{it} \quad (1)$$

$$\text{Entrepreneurship}_{it} = \begin{cases} 1 & \text{if } \text{Entrepreneurship}_{it}^* > 0; \\ 0 & \text{otherwise} \end{cases} \quad (2)$$

$$\text{Military}_{it}^* = \beta_0 + \beta_1 Z_{ip} + \beta_2 X_{it} + \lambda_p + \theta_t + \varepsilon_{it} \quad (3)$$

$$\text{Military}_{it} = \begin{cases} 1 & \text{if } \text{Military}_{it}^* > 0; \\ 0 & \text{otherwise} \end{cases} \quad (4)$$

where $\text{Entrepreneurship}_{it}^*$ is a latent variable representing whether respondent i engaged in entrepreneurship in survey year t , and whether respondent i in year t had military service experience, which is indicated by the dummy variable Military_{it} . We refer to this group of control variables as X_{it} . As mentioned, the inclusion of some exogenous pre-enlistment control variables helps reduce potential endogeneity. λ_p and θ_t denote the province and year fixed effects, respectively. Military_{it}^* is a latent variable that depicts the continuously changing inclination of person i to join the military. Childhood experience of the 1998 China flood is IV, as expressed by Z_{ip} in equation (3). μ_{it} and ε_{it} are the random disturbance terms.

Results

Effect of Military Service on Entrepreneurial Behaviors

Using a male sample from the CLDS, we examined the effect of military service on entrepreneurial behavior in China. Table 1 presents the baseline results of this study. In columns (1) and (2), the results obtained using the linear probability model (LPM) and probit methods show a positive association between military service and entrepreneurial behaviors. Although these results are consistent with our theoretical expectations, the potential endogeneity issues cannot be ignored.

The last two columns in Table 1 report the results of EBPM with an IV. In column (3), the first-stage results show that our IV *China Floods in 1998* is positively correlated with military service at 1% significance level. This suggests that the correlation assumptions of the IV estimation are satisfied and that no weak IV problem exists (Hou et al., 2020). Additionally, the correlation coefficient $\rho_{\mu\varepsilon}$ is statistically significant, indicating selectivity

Table 1. The Effect of Military Service on Entrepreneurial Behaviors.

Variables	(1)		(2)		(3)		(4)	
	LPM		Probit		Military (probit)		IV (EBPM estimates)	
	Entrepreneurship		Entrepreneurship				Entrepreneurship (probit)	
Military	0.0467***	(0.0147)	0.0464***	(0.0128)	0.0298***	(0.0096)	0.3020***	(0.1125)
China Floods in 1998								
Age	-0.0026***	(0.0003)	-0.0027***	(0.0003)	0.0019***	(0.0003)	-0.0030***	(0.0003)
Schooling	0.0615***	(0.0100)	0.0996***	(0.0190)	0.0519***	(0.0136)	0.0914***	(0.0192)
Hukou at birth	0.0440***	(0.0121)	0.0381***	(0.0115)	-0.0203***	(0.0077)	0.0414***	(0.0114)
Education of father	0.0163*	(0.0086)	0.0199**	(0.0092)	0.0054	(0.0059)	0.0181**	(0.0091)
Education of mother	-0.0054	(0.0087)	-0.0057	(0.0086)	0.0025	(0.0055)	-0.0060	(0.0085)
Father farming	-0.0078	(0.0100)	-0.0070	(0.0092)	-0.0140**	(0.0062)	-0.0042	(0.0091)
Mother farming	-0.0120	(0.0113)	-0.0101	(0.0102)	-0.0004	(0.0070)	-0.0099	(0.0100)
Father military	-0.0154	(0.0213)	-0.0105	(0.0216)	0.0293**	(0.0115)	-0.0209	(0.0211)
Mother military	-0.0004	(0.0630)	-0.0015	(0.0648)	0.0813***	(0.0301)	-0.0417	(0.0610)
Parental divorce in childhood	0.0000	(0.0160)	0.0001	(0.0161)	-0.0034	(0.0106)	0.0010	(0.0158)
Siblings	0.0037**	(0.0018)	0.0044**	(0.0019)	0.0020*	(0.0012)	0.0041**	(0.0018)
P _{zjp}					-0.5794*	(0.2791)		
Year FE	Yes		Yes		Yes		Yes	
Province FE	Yes		Yes		Yes		Yes	
Observations	12,889		12,889		12,889		12,889	

Note. The last three columns report the marginal effects for probit regressions. Column (3) shows the first-stage results, and column (4) shows the second-stage results. The standard errors clustered at the individual level are shown in parentheses. LPM = linear probability model; IV = instrumental variable; EBPM = endogenous bivariate probit model; FE = fixed effect.

***, **, and * denote significance levels of 1%, 5%, and 10%, respectively.

Table 2. Military Service and Past Entrepreneurial Behaviors.

Variables	(1)	(2)	(3)
	LPM	Probit	IV (EBPM estimates)
Military	0.0524*** (0.0154)	0.0538*** (0.0138)	0.2455* (0.1264)
Baseline controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Province FE	Yes	Yes	Yes
Observations	12,889	12,889	12,889

Note. Columns (2) and (3) report the marginal effects for probit regressions. Column (3) shows the second-stage results. The standard errors clustered at the individual level are shown in parentheses. LPM = linear probability model; IV = instrumental variable; EBPM = endogenous bivariate probit model; FE = fixed effect.

***, **, and * denote significance levels of 1%, 5%, and 10%, respectively.

bias from unobserved factors affecting military service. Thus, adopting the EBPM is more appropriate. Column (4) reports the second-stage results. The coefficient of *Military* remains significantly positive, suggesting that military service increases the likelihood of entrepreneurship by 30.20 percentage points or increases entrepreneurship by 0.2036 standard deviations. Compared with studies exploring the factors influencing entrepreneurship in China (e.g., Cheng et al., 2021; N. Qin & Kong, 2021; F. Zhang et al., 2021; Zhao & Li, 2022), we believe that our baseline results are relatively compelling regarding both economic and statistical significance.

Moreover, the absolute values of the coefficient of *Military* in the IV estimates are greater than those in columns (1) and (2) of Table 1, and the intergroup differences are presented in Supplemental Table A3. One possible reason for this is the local average treatment effect specific to the IV approach (Angrist & Pischke, 2008; Zhao et al., 2022), which may cause an overestimation of the effect of military service on entrepreneurial behavior. However, the use of IV methods did not affect the causal inferences. Nevertheless, our baseline results imply that military service helps promote entrepreneurial behavior in China.

Military Service and Past Entrepreneurial Behaviors

As emphasized earlier, our baseline results focus only on current entrepreneurial behaviors and may ignore past entrepreneurial behaviors.⁸ For instance, there may be a temporal gap between military experience and entrepreneurship. Here, we replaced the core explained variable *Entrepreneurship* with *Past entrepreneurial behaviors*. We employed three methods—LPM, Probit, and IV estimates—to explore whether military service promotes past entrepreneurial behavior. As Table 2 shows, the estimated coefficients for *Military* are significantly positive in all columns,⁹ indicating that the entrepreneurial effects of military service are not affected by changes in how the explained variable is measured. Notably, these results suggest that military imprinting has a persistent effect on entrepreneurial behavior, further supporting our initial findings.

Table 3. Military Service, Human Capital, and Entrepreneurial Behaviors (IV Estimations).

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Self-rated health	Hurt	Chronic diseases	Mental health impairment	Professional certificate	Entrepreneurial training
Panel A. The effect of military service on human capital						
Military	0.3019*** (0.0636)	-0.1394 (0.3752)	-0.2092*** (0.0609)	-0.0345** (0.0153)	-0.1226 (0.1425)	0.0131* (0.0079)
Observations	12,884	12,881	7,398	12,882	14,884	14,887
Panel B. Mediation effects of human capital variables						
Military	0.2902** (0.1141)	0.3034*** (0.1129)	0.3862*** (0.1110)	0.2575** (0.1132)	0.3071*** (0.1128)	0.1793** (0.0887)
Human capital variables	0.0143*** (0.0035)	-0.0075 (0.0109)	-0.0257 (0.0173)	-0.0330*** (0.0077)	-0.0126 (0.0089)	0.0947*** (0.0090)
Observations	12,884	12,881	7,398	12,882	14,884	14,887

Note. In Panel A, the explained variables in columns (1) through (6) are, in order, the human capital variables shown in the header of Table 5. In Panel B, these variables, in turn, serve as mediation variables and are written as *Human capital variables* (the explained variable is *Entrepreneurship* in all columns). In columns (1) and (4), the endogenous treatment effects model (ETEM) is used in Panel A, as *self-rated health* and *mental health impairment* are regarded as continuous variables. In columns (2), (3), (5), and (6), the EBPM is employed in Panel A, which reports the marginal effects for second-stage results, as these four human capital variables are binary. The EBPM is employed in all columns in Panel B, reporting the marginal effects for second-stage results. The baseline control variables and year and province FEs are added in all regressions. The standard errors clustered at the individual level are shown in parentheses.

IV = instrumental variable; EBPM = endogenous bivariate probit model; FE = fixed effect.

***, **, and * denote significance levels of 1%, 5%, and 10%, respectively.

Robustness Checks

To illustrate the reliability of our baseline results, we conducted several robustness tests, including using alternative identifications, adding additional control variables, removing special observations, and subsample analysis by region prone to floods. In Supplemental Tables A7 to A11 in the Appendix, we find that most of the robustness test results support our baseline estimates, except for column (4) of Supplemental Table A10. This is primarily because the proportion of female veterans in China is small, which interferes with our statistical inferences after adding the female sample.

Mechanism Tests

To test our theoretical assumptions, we further examined the following mechanisms: human capital, social capital, political capital, and risk preferences. These mechanisms are consistent with the primary specifications and are based on a male sample.

Human Capital. According to Hypothesis 1, military service may influence two major aspects of human capital: physical and mental health and entrepreneurial skills. Based on the CLDS questionnaire and prior research (e.g., Johnston et al., 2016; L. Liu & Zhang, 2018), we constructed six variables to measure human capital. The four health variables were *self-rated health*, *hurt*, *chronic diseases*, and *mental health impairment*. Additionally,

two variables—*professional certificates* and *entrepreneurship training*—were used to measure the respondents' entrepreneurial skills.

As shown in Table 3, the results obtained using the IV method suggest that military service was significantly associated with self-rated health, chronic diseases, and mental health. In Panel A of column (1), the self-rated health scores increased by 0.3019 points. These results are consistent with those of previous studies highlighting the “healthy soldier effect” (MacLean & Elder, 2007; McLaughlin et al., 2008; Zhao et al., 2023). However, no significant correlation was observed for *Military* in column (2). This may be because the CLDS database provides information only on work-related injuries. The results in column (3) suggest that military service reduces the likelihood of chronic diseases, re-emphasizing the positive effects of military service on physical health. Additionally, the coefficient of *Military* in column (4) is significantly negative, indicating that veterans may have better mental health status in China. This estimate is similar to the findings of previous studies (Elbogen et al., 2013), indicating that military services contribute to enhancing mental health.

Regarding the effects of military service on entrepreneurial skills, we present the IV estimation results in columns (5) and (6) of Table 3. We discovered that although no association existed between military service and occupational credentials, individuals with military service experience were more likely to receive entrepreneurial training. Given the potential social disconnection during military service, local governments and troops often organize vocational and entrepreneurial training to assist veterans in better adapting to civilian society in China.

To rigorously test the mediating effects, we included these mediating variables in the baseline regression. Panel B of Table 3 presents the results obtained using EBPM. Our findings indicate that self-rated health contributed to entrepreneurship and that chronic diseases and mental health impairments were negatively associated with entrepreneurial behaviors. These findings are consistent with those of several previous studies exploring physical and mental health and entrepreneurial behaviors (e.g., L. Liu & Zhang, 2018; Zhao & Li, 2022). Notably, when compared with the baseline result in Table 1 (0.3020), the coefficient of *Military* decreases by 3.91% and 14.74% in columns (1) and (4), respectively. This indicates that the mediating effect of physical and mental health holds.¹⁰ Furthermore, the results in the last column provide evidence for the positive and significant impact of entrepreneurial training on entrepreneurship, consistent with existing literature (e.g., Cheng et al., 2021; Djankov et al., 2006; Marvel et al., 2016). With the inclusion of *Entrepreneurial training*, the coefficient of *Military* became 0.1793, a decrease of 40.62%. This finding strongly supports the conclusion that military service promotes entrepreneurship through training channels.

In summary, our results provide supportive evidence for Hypothesis 1 that military service is likely to increase the possibility of entrepreneurship because of improvements in human capital. Particularly, joining the military boosts men's mental health and increases the probability of receiving entrepreneurial training, which further explains the entrepreneurial effects of military service in China.

Social Capital. As discussed in Hypothesis 2, there may be two opposing intermediating mechanisms between military service and entrepreneurial behaviors: a relative disadvantage for veterans in civilian-related social capital and a relative advantage in military-related social capital. Based on the CLDS and previous studies (Estrin et al., 2013; F. Zhang et al., 2021), we selected two variables to measure respondents' civilian-related social capital: *local*

Table 4. Military Service, Social Capital, and Entrepreneurial Behaviors (IV Estimations).

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Civil-related social capital			Military-related social capital		
	Local friends with lending money	Entrepreneur ship	Social interaction	Entrepreneur ship	Introducing business from comrades-in-arms	Entrepreneur ship
Military	−0.3017** (0.1527)	0.3005*** (0.1123)	−0.0027 (0.0055)	0.3020*** (0.1129)	0.0138*** (0.0027)	0.2560* (0.1378)
Social capital variables		0.0119* (0.0070)		0.00005 (0.0069)		0.1491** (0.0614)
Baseline controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	12,889	12,889	12,889	12,889	12,889	12,889

Note. Except for column (3), the EBPM is used in other columns to report the marginal effects of second-stage results. The ETEM is used in column (3), as *Social interaction* is a continuous variable. The standard errors clustered at the individual level are shown in parentheses. IV = instrumental variable; FE = fixed effect; EBPM = endogenous bivariate probit model; ETEM = endogenous treatment effects model.

***, **, and * denote significance levels of 1%, 5%, and 10%, respectively.

friends with lending money and *social interactions*. Moreover, concerning military-related social capital, we constructed a proxy variable *Introducing business from comrades-in-arms*.

Table 4 presents the IV results for testing the social capital channel. In columns (1) and (3), we discovered that the coefficient on *Military* is negative and statistically significant in the former column. This aligns with our hypothesis that Chinese veterans may face challenges regarding civilian-related social capital. To further test this negative effect, we selected two other social capital variables related to entrepreneurship: *entrepreneurial opportunities from friends* and *start-up capital from relatives or friends*,¹¹ using the CLDS database. The results in Supplemental Table A12 further illustrate that military service weakens the accumulation of entrepreneurship-related civilian social capital.

Moreover, in column (2), the coefficient of *Military* decreases slightly to 0.3005 after the addition of the mediating variable, suggesting that although Chinese veterans have not accumulated sufficient civil society capital, it has a small mediating effect on entrepreneurship. The results in column (5) indicate that military service is significantly and positively related to introducing businesses from comrades-in-arms, offering preliminary evidence of the enhancement of military-related social capital through military service (Hou et al., 2020). Furthermore, as shown in column (6), the explanatory power of military-related social capital for veteran entrepreneurship in China is approximately 15.23% as the coefficient of *Military* shifts from 0.3020 to 0.2560. Therefore, our estimates provide suggestive evidence for Hypothesis 2, that higher entrepreneurial motivation among Chinese veterans may be influenced by military-related social capital.

Political Capital. Subsequently, we explored whether political capital promotes entrepreneurial behavior among Chinese veterans. Several variables were selected to measure political capital. First, from the perspective of political identity, the dummy variable *Party membership* was included (C. Zhang, 2015). Second, a binary variable—*Previous employment in*

Table 5. Military Service, Political Capital, and Entrepreneurial Behaviors (IV Estimations).

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Party membership	Entrepreneurship	Previous employment in government sectors	Entrepreneurship	Policy support	Entrepreneurship
Military	0.1684*** (0.0084)	0.3001*** (0.1138)	0.0288*** (0.0041)	0.2439*** (0.0057)	0.2298*** (0.0443)	0.2835** (0.1158)
Political capital variables		0.0017 (0.0101)		0.0337** (0.0145)		0.0694*** (0.0096)
Baseline controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	12,889	12,889	12,889	12,889	12,889	12,889

Note. The EBPM is employed in all columns, reporting the marginal effects of second-stage results. The standard errors clustered at the individual level are shown in parentheses. IV = instrumental variable; FE = fixed effect; EBPM = endogenous bivariate probit model.

***, **, and * denote significance levels of 1%, 5%, and 10%, respectively.

government sectors, representing a strong political association for individuals (Burt & Oppen, 2020)—was constructed. Third, regarding supportive policies for entrepreneurship, the continuous variable *Policy support* was included.

Table 5 shows the regression results for the political capital mechanisms. The IV estimations in column (1) suggest that military service is positively and significantly related to respondents' party membership, consistent with previous research in Chinese settings (Hou et al., 2020; C. Zhang, 2015). As column (3) shows, military service significantly increases the probability of employment in the government sector. Chinese veterans have advantages in public-sector hiring because of their preferential national treatment. Some veterans are placed directly in government sectors (Zhao et al., 2023); however, even if they do not meet job placement requirements, they are more likely to work in government sectors by relying on their military service's quasi-political credentials (Hou et al., 2020). Moreover, column (5) shows that military service enables individuals to utilize policy support for entrepreneurial behavior.

Consistent with the results of the previous mediating effect tests, we added each of these mediating variables to the baseline regression. The results from the IV method are reported in columns (2), (4), and (6) of Table 5. Party membership was not significantly associated with entrepreneurship, and the mediating effect was negligible. Party membership is a political identity that represents weak political capital and has little relevance to commercial behavior in China (Chen et al., 2012). Additionally, previous employment in the government sector and policy support were significantly related to entrepreneurship—which is consistent with previous research (Román et al., 2013)—with mediating effects of 19.24% and 6.13%, respectively. In summary, our estimates offer supportive evidence for Hypothesis 3, that military service contributes to entrepreneurship by enhancing political capital.

Risk Attitude. The last mechanism tested was risk appetite. Hypothesis 4 proposes that military service is likely to increase veterans' risk preferences, which in turn helps promote

Table 6. Military Service, Risk Preference, and Entrepreneurial Behaviors (IV Estimations).

Variables	(1)	(2)	(3)	(4)
	Commercial insurance	Entrepreneurship	Risky financial assets	Entrepreneurship
Military	-0.3684*** (0.0511)	0.2907** (0.1177)	0.1617*** (0.0365)	0.3008*** (0.1108)
Risk preference variables		-0.0238** (0.0095)		0.0284** (0.0141)
Baseline controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes
Observations	12,809	12,809	12,741	12,741

Note. The EBPM is employed in all columns, reporting the marginal effects of second-stage results. The standard errors clustered at the individual level are shown in parentheses. IV = instrumental variable; FE = fixed effect; EBPM = endogenous bivariate probit model.

***, **, and * denote significance levels of 1%, 5%, and 10%, respectively.

entrepreneurship. However, risk appetite is not appropriately measured in the CLDS database. Based on data availability, we select two risk-appetite-related proxy variables: *commercial insurance* and *risky financial assets*. Social, medical, and pension insurances are ubiquitous in China. Thus, respondents may be more risk-averse if they purchase commercial medical and pension insurance (Cutler et al., 2008). Moreover, purchasing risky financial assets entails the risk of losing money, indicating a greater risk preference (Wen et al., 2023; Zhao & Li, 2022).

Table 6 reports the results for risk preference using the IV method. The estimated coefficient on *Military* is significantly negative in column (1), while it is significantly positive in column (3). These results imply that Chinese veterans have a greater risk appetite, consistent with previous research (Guo et al., 2020; Malmendier et al., 2011; Wen et al., 2023). We also analyzed the mediating effect of risk appetite. Columns (2) and (4) show that commercial insurance is significantly negatively associated with entrepreneurship and that risky financial assets are positively associated with entrepreneurial behaviors. These results emphasize the positive role of risk appetite in entrepreneurial behaviors (de Blasio et al., 2021; Kihlstrom & Laffont, 1979; Moss et al., 2015; Vereshchagina & Hopenhayn, 2009). Furthermore, although the estimates imply that the mediating effect of risk preferences exists, this effect does not seem to be evident. Specifically, the coefficients on *Military* decrease by only 3.74% and 0.40%, respectively, suggesting that risk preference may not be the core channel for stimulating entrepreneurial enthusiasm among Chinese veterans.

In summary, individuals with military service tend to take risks and thus have a greater possibility of engaging in entrepreneurial behaviors than non-veterans. However, in the Chinese setting, our estimates also show that the risk-appetite characteristics of military service do not dominate entrepreneurial behavior.

Heterogeneity Effects

In Supplemental Table A13 of the Appendix, we explore the heterogeneous effects of military service on entrepreneurship in several ways. First, regarding the types of veterans, we found a

positive entrepreneurial effect of military service in the group of non-placement veterans and conscripts. As they are not directly placed in the public sector after discharge, they may prefer entrepreneurship over finding a job and becoming entrepreneurs (Hou et al., 2020). Second, regarding entrepreneurship types, military service is more conducive to stimulating employer-based and informal entrepreneurship in China. Third, from the perspectives of *hukou* and age, similar to previous literature (Card & Lemieux, 2001; C. Zhang, 2015), the entrepreneurial dividend of military service is more visible among rural and older age groups. Additional details are provided in Supplemental Appendix C.

Supplemental Analysis

Supplemental analyses were performed. First, we investigated whether exogenous shocks influence the entrepreneurial effects of military service in China. Specifically, we selected three exogenous events: the MIB policy, higher education expansion, and WTO accession. The results in Supplemental Tables A14 to A16 in the Appendix show that the MIB policy strengthens the positive entrepreneurial effect of military service, whereas the exogenous shocks of the higher education expansion policy and WTO accession weaken this effect. Second, regarding entrepreneurial performance, Supplemental Table A17 reveals that military entrepreneurs have a higher entrepreneurial income, entrepreneurial frequency, and propensity to engage in entrepreneurship in the future. Moreover, veterans are not forced to engage in entrepreneurial behavior in China. Finally, as prior research has found an income premium effect for Chinese veterans (Hou et al., 2020; C. Zhang, 2015), we sought to explain whether entrepreneurial behavior could account for this premium. In Supplemental Table A18, the IV estimates provided supporting evidence, suggesting that entrepreneurship is one way to improve the socioeconomic status of Chinese veterans. Further details on the supplemental analysis are provided in Supplemental Appendix D.

Conclusions

Main Findings

We explored the impact of military service on entrepreneurial behavior using a sample of men from the CLDS database. Considering the potential endogeneity issues arising from the self-selection and troop screening effects of military service in China, we selected childhood experiences of the 1998 China Floods as the IV to identify the causal effect. To safeguard the exogeneity of the IV, we rigorously tested the exclusion restrictions. Additionally, we excluded the problem of reverse self-selection of self-reported military-related information from the CLDS database.

Our primary findings are summarized as follows. First, our baseline results indicate that military service promotes entrepreneurial behaviors in China. Based on the IV estimates, we argue that military service increases the likelihood of engaging in entrepreneurship by 30.20 percentage points, equivalent to a 0.2036 standard deviation increase. The primary effect remained unchanged when the explained variable was replaced with past entrepreneurial behavior. Our baseline results were obtained through a series of robustness checks, including the use of alternative identifications and databases, the addition of additional control variables, and the exclusion of special observations. By employing an alternative to natural disasters, we discovered that military service contributes to entrepreneurial behavior.

Second, we explore the impact of military service on participation in entrepreneurship. Mechanistic analyses revealed that the positive entrepreneurial effect of military service could be explained by human and political capital accumulation, military-related social capital formation, and risk-averse attitudes. Enhanced mental health, entrepreneurial training, military-related social capital, and prior employment in the government sector predominantly account for this positive entrepreneurial effect, with the mediating effect of risk preference being negligible. Moreover, although male Chinese veterans have deficiencies in civilian-related social capital, this does not lead to entrepreneurial disadvantages.

Third, heterogeneity analyses revealed that non-placed, compulsory, rural-born, and older veterans exhibit higher motivation to pursue entrepreneurship in China. Moreover, military service helped promote employer-based entrepreneurship as well as formal and informal entrepreneurship. By contrast, the positive impact of military service on formal entrepreneurship is even more pronounced.

Finally, through analyses of exogenous shock effects, we found that the special MIB policy strengthened the positive entrepreneurial effect of military service, whereas the higher education expansion policy and WTO accession weakened this effect. Additionally, military entrepreneurs have better business performance and are more resilient and confident about re-entrepreneurship after a failure. This may explain the income premium effect among male veterans. Finally, we found no evidence that Chinese veterans are compelled to engage in entrepreneurship because of insufficient job opportunities.

Theoretical Implications

First, this study contributes to the theory of entrepreneurship and imprinting by linking prior military service experience with individuals' participation in entrepreneurship. Some studies have discussed the impact of the imprinting effect of past experiences on entrepreneurial behaviors, such as adverse childhood (Cheng et al., 2021; Zhao & Li, 2022), immigration (Démurger & Xu, 2011), and overseas experiences (F. Qin et al., 2017). Scholars have focused on how specific conditions and experiences shape an individual's personality as a predictor of the propensity for entrepreneurship. For example, Cheng et al. (2021) suggested that children experiencing adversity often develop self-reliance, resilience, resourcefulness, and risk-taking, which correlate to entrepreneurial tendencies. By exploring early life experiences within the military context, we indicated that the propensity for entrepreneurship is related not only to the human and political capital accumulated by veterans in military life but also to the excellent traits of risk appetite, perseverance, and self-confidence developed by military imprints. Our findings provide novel insights regarding the entrepreneurial effects of particular experiences and advance imprinting theory.

Second, we supplemented the literature on the economic behavior and welfare effects of military services. Our findings question prior research suggesting that military service leads to impaired welfare and life difficulties for Chinese veterans (e.g., Diamant, 2011; Diamant & O'Brien, 2015; H. Wang et al., 2023). Specifically, our findings suggest that, in China, the military is a lucrative status symbol that can offer various unique resources to veterans, such as political and military-related social capital (Wen et al., 2023; C. Zhang, 2015; Zhao et al., 2023). Based on entrepreneurial behaviors, we also provide a new explanation for the income premiums received by Chinese veterans. Moreover, considering the significant influence of informal institutions and social networks on entrepreneurial behaviors in developing countries (Audretsch et al., 2022), our research provides valuable insights into incentives for entrepreneurship in China and other developing countries.

Third, several management studies have focused on the impact of military executives on business operations. However, debates continue on the risk attitudes of military executives regarding whether they are aggressive (Guo et al., 2020; Malmendier et al., 2011; Wansink et al., 2008) or conservative (Bamber et al., 2010; Benmelech & Frydman, 2015). Using the IV method, we discovered that military service lays a solid foundation for entrepreneurship in China, supporting the idea that it makes individuals more aggressive and willing to take risks (Guo et al., 2020; Malmendier et al., 2011; Wen et al., 2023). Additionally, the behavior of veterans who re-enter business after failure shows that they may be more resilient and confident and have richer psychological capital. From a psychological perspective, an early military career can shape and reinforce several excellent traits such as risk-taking, hard work, a fearless spirit, and self-confidence (Gao et al., 2021; Xu et al., 2022), which further translate into entrepreneurial behaviors.

Practical Implications

We found that the positive effects of military service can be explained primarily by human and political capital accumulation and the formation of military-related social capital. Therefore, enhancing relevant policies and measures may encourage more veterans to become entrepreneurs. Feasible measures include strengthening entrepreneurship training, enhancing political literacy, and establishing more official veteran organizations to strengthen ties between comrades in arms.

We discovered that civilian-related social capital cannot explain the favorable effects of military service on entrepreneurship in China. Some veterans made important contributions to the country's independence and democratic revival; however, they lost their local social networks owing to military service. Moreover, unemployed veterans and regular conscripts are more likely to be entrepreneurs. Thus, more policy support should be provided to veterans to compensate for their social capital and encourage entrepreneurship. Specific support could be considered, such as providing more entrepreneurial information, more favorable interest rates on business loans, and tax breaks for veteran entrepreneurs.

Furthermore, this study revealed that only the special MIB policy reinforced the positive relationship between military service and entrepreneurial behavior, while both the higher education expansion policy and WTO accession weakened this positive effect. This finding implies that the entrepreneurial effect of joining the military in China may decrease with higher education and socioeconomic development. Hence, from an entrepreneurial perspective, the benefits of military service are relatively disadvantageous compared with those of higher education. Thus, additional support from the military, local governments, and society is necessary for entrepreneurship. For example, more soldiers should have access to military higher education institutions, and the curricula should be enhanced in terms of civilian-military integration, knowledge, and skills.

Limitations and Future Research

First, information on military service was limited to a database. We cannot distinguish between the type and place of service, as well as ascertain the type, rank, or mode of discharge (Hou et al., 2020; Z. Zhang et al., 2022). However, although this concerns the employment placement of veterans, we identified it from the perspective of length of service. Conducting a rigorous analysis of the differences in veterans' entrepreneurial behaviors may be challenging because employment placement policies vary across China.

Overall, our estimates are average treatment effects that cannot be extended to a specific type (e.g., volunteers) or service members from a specific military branch (e.g., artillery or armed police forces). Scholars could construct a more complete database through a special social survey of Chinese veterans to supplement and extend our findings.

Second, further studies on the underlying mechanisms are required. First, the measurement of certain mechanism variables should be optimized. For instance, a potential problem with the two proxy variables for risk attitude is that a particular group of veterans may enjoy additional social security measures (Zhao et al., 2023), which may decrease their incentives to purchase additional commercial insurance. Moreover, owing to database limitations, some mechanism variables, such as military-related social capital, were not adequately measured. Moreover, some channels, such as physical capital and liquid assets, were not fully reflected. As mentioned in section “Institutional Background” in Supplemental Appendix A, military personnel in China receive monetary compensation upon retirement depending on their performance, military rank, and length of service. Some veterans receive a one-time allowance. Military service may also contribute to the accumulation of physical capital (Angrist & Krueger, 1994; Maclean & Kleykamp, 2021). Physical capital is the foundational element of entrepreneurship. Thus, future research could design, administer, and survey more detailed information on key concepts to examine their roles in military entrepreneurial behavior.

Third, our IV may have limitations because flood regions are conditional and selective, and individuals may have different exposures to floods. Thus, the IV group was not randomized. We ruled out exclusion restriction constraints in multiple directions, and some major pathways were statistically represented as non-disturbing in our study design. However, we acknowledge that we cannot fundamentally and completely eliminate other channels through which childhood experiences of the 1998 China Floods influenced entrepreneurial behaviors in theory. Nonetheless, we believe that these channels are less disruptive. In addition, we should pay more attention to the validity of IV estimates under the high leverage regression and the statistical significance of excluded instruments (Young, 2022). Subsequent research could design a theoretically and statistically exogenous IV to identify the causal effects of military service on entrepreneurship.

Fourth, we used only a male sample, and some conclusions may not hold true for females. However, this does not imply that the entrepreneurial effects of military service do not apply to women. Theoretically, women and men do not differ in their accumulation of human, social, or political capital. Therefore, to a certain extent, our theoretical analysis had no gender preferences and applies to all veterans. As more surveys focusing on veterans (particularly female veterans) are being conducted, our theoretical assertions may be validated using female samples.

Finally, this study employed the traditional empirical method within the current ex-ante hypothesis framework rather than utilizing an abductive approach (King et al., 2021). As the general theory and evidence for both military service and entrepreneurial behavior are already well established, developing, and defining new hypotheses is challenging. Additionally, it is important to explain the variations in the dependent variable from multiple theoretical perspectives. Therefore, our hypotheses do not follow a single mechanism. Future studies involving similar topics may adopt a question-driven approach (Berry et al., 2021). For instance, an abductive approach can present a causal relationship and explain why a plausible relationship exists. Subsequent studies might attempt to use an inductive approach to explore the entrepreneurial effects of military imprinting.

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Supplemental Material

Supplemental material for this article is available online.

Notes

1. See Supplemental Appendix A for relevant institutional background on China's military service.
2. A summary of the China Floods in 1998 is also presented in Supplemental Appendix A.
3. We used the third and fourth waves of CLDS data in 2016 and 2018 because some key variables and information were missing in the first two waves, especially some core mediating variables in the mechanism tests.
4. Although other databases, such as China Family Panel Studies (CFPS), China Health and Retirement Longitudinal Study (CHARLS), China Household Finance Survey (CHFS), or Chinese General Social Survey (CGSS), provide information on military service, they do not include detailed or complete information on entrepreneurship.
5. In the raw data from the CLDS 2016 and 2018 waves, only 26 female observations had military service, representing 0.14% of the female sample and 0.07% of the full sample. Nevertheless, we would include female observations in the robustness tests (as shown in Supplemental Table A10 in the Appendix).
6. Note that it is difficult to tell whether educational experience precedes or follows military service. Realistically, some veterans have already completed their education when they joined the military and no longer receive regular education even after discharge (Hou et al., 2020). However, some members of the military may obtain higher education while serving, particularly by attending a military academy (Zhao et al., 2023). In China, attending military schools is one of the most important ways for soldiers to be promoted. Therefore, we included *Schooling* in the control variable set to ensure that the education-related variable is a pre-enlistment variable.
7. In China, the *hukou* is a public certificate book in which natural persons are registered and certified by households. The recorded information includes name, date of birth, kinship, and marital

- status. It is the basic legal document that determines the legal status of a natural person as a civil subject in China. In this study, *hukou* is classified as rural and non-rural *hukou*.
8. Past entrepreneurial behaviors were not considered within the main specification because we could not determine the specific past years of entrepreneurship of the respondents using the CLDS database. Therefore, using this explained variable in the baseline regressions may challenge our mechanism testing.
 9. The first stage of the EBPM is consistent with column (3) of Table 1 and is not shown in Table 2.
 10. The mediating variable *Chronic diseases* has a high number of missing values. We found a coefficient of 0.4111 ($p < .01$) for military service in the baseline results after excluding these missing values. Thus, even though the coefficient of *Chronic diseases* is insignificant in column (3) of Panel B, there could be a potential mediating effect as the coefficient of *Military* decreases.
 11. These two variables target entrepreneurs in the CLDS questionnaire, implying that they are fully covariant with the core explained variable *Entrepreneurship*. Therefore, they cannot be used as mediating variables. Here, we provided only indirect evidence.

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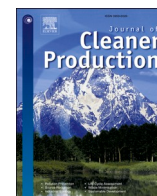
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Barriers to electric vehicle battery recycling in a circular economy: An interpretive structural modeling

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ABSTRACT

An increasing number of electric vehicle batteries will reach the end of their life cycle with the fast growth of electric vehicles. Since the recycling of retired electric vehicles batteries is of great significance in the light of resource utilization, ecological protection, energy saving and economic benefits, the proper management of electric vehicle battery recycling (EVBR) is crucial for achieving sustainable development. However, due to the involvement of multiple stakeholders, there are many potential barriers in the process of EVBR, and analyzing these barriers can significantly help the recycling management of waste electric vehicle batteries towards a circular economy. Although the literature has focused on analyzing obstacles to implementing reverse logistics for electric vehicle lithium battery recycling from a manufacturer's perspective, less attention has been paid to analyzing barriers to EVBR from a multi-stakeholder perspective. This paper thus aims to investigate the barriers to EVBR from a multi-stakeholder point of view, identify the main barriers affecting battery recycling, and analyze the interrelationships and hierarchies between these barriers. Based on expert opinions and literature reviews, this paper identifies twenty major barriers to EVBR and uses interpretive structural modelling (ISM) method to determine the interrelationships and hierarchies between the barriers, and finally classifies the barriers to EVBR into a seven-level structural model. Furthermore, matrixed impacts corises-multiplication appliance classement (MICMAC) analysis is applied to categorize the identified barriers to EVBR, and the twenty barriers are finally classified into three categories, namely dependent barriers, linkage barriers, and driver barriers. This paper discusses theoretical insights, managerial and practical implications, and measures to overcome EVBR barriers based on the results, which show that the lack of more appropriate incentives is a major barrier to EVBR implementation. This paper provides a solid theoretical foundation for the further development of battery recycling policies, and will also help relevant stakeholders and governments to better understand these barriers and adopt effective approaches to address them.

1. Introduction

The transport sector has long been a major carbon emitter (Awan et al., 2022; Feng et al., 2021). However, the world has yet to find an effective solution to carbon emissions, which have been on the decline in developed countries in areas such as industry and construction in the past years (e.g. 2021–2022), but have not changed significantly in the transport sector (IEA, 2023a). Reducing the carbon footprint of the transportation sector is thus crucial to the achievement of carbon neutrality and the transition to a circular economy (Yang et al., 2023). In recent years, electric vehicles have been the focus of much attention from a growing number of academics and industries due to their proven superior performance in terms of carbon emission reduction. Driven by

environmental pressures and policy incentives, electric vehicle development has progressed significantly (Liu et al., 2023; Xu et al., 2023). For example, over the past few years, major countries around the world have developed various incentivized policies to develop electric vehicles, which has been instrumental in their rapid spread (Kester et al., 2018; Zhang et al., 2017). Furthermore, according to electric vehicle sales data, over 10 million electric vehicles were sold worldwide in 2022 (IEA, 2023b). The rapid growth of electric vehicles has undoubtedly made a significant contribution to the reduction of carbon emissions in the transportation sector (Zhang et al., 2022). From the perspective of a circular economy, widespread adoption of electric vehicles and electrifying the transport sector are key measures to achieving carbon reductions in transport (Andwari et al., 2017; Isik et al., 2021; Zhang and

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Hanaoka, 2021).

As the popularity of electric vehicles explodes, another major challenge is managing electric vehicle battery recycling (EVBR) to cope with the large volumes of retired batteries. As we all know, once the waste battery is discarded into the natural environment, it has an incalculable impact on the ecosystem and have an adverse effect on public health (Du et al., 2022). To reduce the ecological pollution caused by batteries, recycling batteries is particularly necessary and important (Yang et al., 2021). Recycling end-of-life electric vehicle batteries thus has the potential to deliver huge economic and environmental benefits (Qiao et al., 2019, 2021; Shafique et al., 2022). However, the current rate of EVBR is not very high (Woollacott, 2021). Moreover, battery recycling is a complex and challenging issue that involves a wide range of stakeholders including manufacturers, consumers, battery technology developers, recyclers, dismantlers, downstream users and policy makers (Dong and Ge, 2022). Consequently, battery recycling is not just the business of recyclers, but involves a wide range of stakeholders, which makes the EVBR a challenging endeavor (Bhuyan et al., 2022). There are a number of problems with EVBR, such as recycling technology and safety, which limit the large-scale recycling of batteries (Kang et al., 2023; Yu et al., 2022). Meanwhile, many academics and industry stakeholders are calling for the development of a comprehensive battery recycling system that takes an interdisciplinary and multi-sectoral approach, including the fields of engineering, economics, environmental science and systems science. The most recent studies have been dedicated to designing EVBR supply chain networks (Sasikumar and Haq, 2011; Tadaros et al., 2022), auctions for battery recycling (Feng et al., 2024; Xu et al., 2022), and battery recycling subsidies (Gu et al., 2017; Li et al., 2020). However, there has been little discussion of the key factors which have an impact on EVBR to date.

To promote EVBR for sustainable development, countries worldwide have formulated EVBR policies and regulations to encourage and regulate battery recycling industry development (King and Boxall, 2019; Ren et al., 2023; Sun et al., 2021; Yang et al., 2022). For instance, the European Union has established a clear battery recycling system to promote a circular economy.¹ China has also formulated a series of battery recycling policies, including encouraging enterprises to carry out battery recycling business and building infrastructure related to battery recycling (Tian et al., 2014). While these policies have been an important driver of battery recycling, however, research to analyze the barriers to EVBR is challenging because of the interdisciplinary characteristics of battery recycling, which requires background knowledge in materials science, logistics, management science, ecology, etc. For example, a recycler may also need expertise in materials science, logistics, etc. to ensure safe battery recycling. On the other hand, EVBR involves stakeholders like regulators, consumers, recyclers, battery engineers and manufacturers, which add to the complexity of the battery recycling issue. To achieve efficient recycling of electric vehicles batteries, there is a pressing need to identify potential barriers and develop effective policies and measures to overcome them. To this end, the further investigation of the barriers to EVBR is an interesting and valuable research topic. Specifically, the research questions that this study aims to address are given as follows: i) What are the key batteries that affect EVBR? ii) What are the complex relationships and hierarchies that exist between these barriers? And iii) What measures should stakeholders adopt to improve battery recycling in response to these barriers?

This paper is dedicated to investigating the barriers to EVBR to provide insights for policy and decision making. The purpose of this work is thus to determine the key barriers to EVBR, to identify their interrelationships and hierarchical relationships using an interpretative structural modeling (ISM) and to provide managerial insights. To answer research question one, this paper identifies potential twenty barriers to EVBR through literature and expert opinion. To answer

research question two, this paper identifies the relationship of the barriers through the ISM method, which has been extensively adopted for the analysis of barriers. For example, the barrier analysis of green lean implementations (Cherrafi et al., 2017), barrier analysis in the energy sector (Ansari et al., 2013), barrier analysis in the supply chain (Agrawal et al., 2019), barriers to the adoption of industry 4.0 technologies in the manufacturing industry (Senna et al., 2022), and barriers to digital adoption in manufacturing (Senna et al., 2023). Finally, this paper applies the MICMAC (matriced impacts corises-multiplication appliance classement) methodology to analyze the impacts and dependencies between the barriers and to provide management and practical insights. Besides, this paper proposes measures to overcome the barriers based on the results of the study to answer research question three.

A summary of the key contributions of this study is provided below. Firstly, this study examines the barriers to the battery recycling process and identifies potential barriers to EVBR through an extensive literature review and expert consultation. Secondly, this paper identifies the hierarchy between barriers through the ISM approach, classifies the identified barriers by the MICMAC method and provides relevant stakeholders such as governments, businesses and academia with important insights on how to overcome these potential barriers. Thirdly, this paper provides a theoretical framework to analyze the barriers to EVBR for the government, enterprises, consumers, environmental organizations and other stakeholders, which helps researchers to further understand the various factors affecting the recycling of waste batteries in a comprehensive manner, and facilitates the implementation and promotion of battery recycling. Although this paper is orientated towards China, the research questions and methodology are also applicable to other countries or regions dedicated to improving the recycling of electric vehicle batteries, and can also help them to identify potential barriers so that they can formulate effective policies and measures to achieve the transition to a circular economy.

The rest of the organizational structure of this study is set out below. A review of related research is presented in Section 2. Section 3 identifies barriers to EVBR, identifies the hierarchy between barriers by the ISM method and determines the classification of barriers via the MICMAC methodology. Section 4 provides a discussion of key findings, theoretical implications, managerial and practical insights. Section 5 draws conclusions, research limitations and some interesting and valuable future research directions.

2. Literature review

This section will review the work related to this paper from two aspects. The first one is the research related to EVBR and the second one is the application of ISM methodology.

2.1. Electric vehicle battery recycling related studies

EVBR is crucial in helping to develop and promote a circular economy, and the focus for the reduction of the environmental impact of electric vehicle batteries lies in the exploration of the use of recyclable battery materials and the increase of the battery recycling rate. Increasing the recycling rate of batteries has been the subject of a considerable amount of literature. For example, Tang et al. (2018) applied a game theory approach to explore the impact of reward and punishment mechanisms on EVBR, and concluded that increasing environmental awareness can promote EVBR. Lin et al. (2023) presented four regulatory options for EVBR, and used a game-theoretic model to explore the merits and demerits of different scenarios from economic, social and environmental perspectives. Li et al. (2022) investigated four joint recycling strategies for waste batteries by applying game theory based on the manufacturer's perspective, and provided the optimal strategy selection conditions under different scenarios. Zhao et al. (2022) studied three various EVBR pricing strategies in the context of having subsidies and the results confirmed that subsidies can promote

¹ <https://data.consilium.europa.eu/doc/document/PE-2-2023-INIT/en/pdf>.

EVBR. Furthermore, there is also literature dealing with designing networks for EVBR. For example, Wang et al. (2020) discussed EVBR network design from a manufacturer's perspective, considering three strategies for battery recycling, remanufacturing, and disposal, and found that the number of waste batteries, logistics costs, and carbon taxes are key factors affecting battery recycling. Liu et al. (2021) investigated the effect of remaining battery capacity on recycling, constructed two mathematical planning models, and argued that uncertainty in remaining battery capacity has a considerable effect on the supply chain. Hu et al. (2022) developed a EVBR network model that is able to deal with both the facility locations and vehicle travelling paths problem, and validated the model with real cases. Li et al. (2023) analyzed the decision problem of EVBR systems from a cross-network cooperation perspective and developed a mixed-integer planning model, and the study's results have shown that the proposed mathematical planning method is beneficial for the reduction of the cost of recovery.

The economic, technological and environmental advantages of EVBR have been the subject of several studies. For instance, Qiao et al. (2019) investigated the wide range of economic and environmental advantages of battery recycling, arguing that as battery recycling continues to scale up, the economic and environmental advantages will be particularly strong. Pražanová et al. (2022) reviewed the potential economic and environmental effects of battery recycling and found that there is a dearth of literature analyzing current EVBR from an economic perspective. Lima et al. (2022) studied the key factors impacting the economics of EVBR, arguing that the economic benefits of EVBR are compromised by the lack of volume recycling. Yu et al. (2022) discussed the affect of policy upon battery recycling and the economic and environmental effects of battery recycling, and summarized some of the challenges facing battery recycling and made recommendations, but did not systematically analyze and identify the barriers to battery recycling. Jiang et al. (2021) argued that the economic benefits are better realized by the stepwise utilization of batteries than by simply recycling the metallic materials of the batteries. Tripathy et al. (2023) discussed the key drivers of electric vehicles lithium battery recycling and assessed them in terms of their economic, social and environmental dimensions. The literature highlighted the need and importance of recycling lithium batteries in social, economic and environmental terms; however, it did not investigate the key factors influencing the recycling of lithium batteries.

Recently, literature has been published that examines the factors influencing the recycling of electric vehicle batteries from various perspectives. Dong and Ge (2022) investigated the key factors influencing battery recycling from a consumer perspective. Huang et al. (2022) surveyed the effects of policy on the willingness to purchase electric vehicles, and the study found that battery recycling policies are conducive to increasing sales of electric vehicles. Zeng et al. (2015) found that regulation, recycling models and recycling technologies are the main factors affecting battery recycling. Chen et al. (2019) discussed three important factors affecting battery recycling, namely changes in raw material prices, uneven distribution of battery production and transport conditions, and concluded that there is a need for greater collaboration between government, academia and industry to continuously improve EVBR. Lander et al. (2021) developed a techno-economic framework for recycling batteries to make EVBR economically viable and concluded that the economic benefits of recycling batteries rely on transport distances, labour costs and the technological approach used to recycle. Beaudet et al. (2020) discussed the financial and technical challenges of battery recycling before concluding with policy recommendations, but did not systematically and comprehensively identify the main barriers to battery recycling. Tang et al. (2023) empirically analyzed the factors influencing residents' willingness to participate in battery recycling, and the study concluded that recycling price has a noteworthy effect on the recycling rate. Tripathy et al. (2022) discussed the factors promoting battery recycling from a technical, environmental

and organizational perspective, and the results showed that an advanced recycling business model can significantly improve the battery recycling rate.

These studies have laid a solid theoretical foundation for the promotion of EVBR and further in-depth research on battery recycling. For example, literature on the environmental, economic, and social merits of EVBR has emphasized the need of batteries recycling. Recycling management practices for electric vehicle batteries are shifting from a single model to sustainable systems management. This requires additional efforts by battery material developers, technologists, consumers, manufacturers, policymakers and others to improve battery recycling. With so many stakeholders involved, identifying the key barriers to battery recycling is critical to policy development and business practices. Furthermore, this paper is close to Azadnia et al. (2021), but does not have the same research topic as Azadnia et al. (2021). Azadnia et al. (2021) focused on the key barriers to the implementation of EVBR reverse logistics, whereas this paper focuses on the analysis of the barriers to EVBR. More importantly, this paper identifies broader barriers to EVBR through expert opinion and literature. In contrast to the aforementioned literature, this paper focuses on analyzing the barriers to recycling electric vehicle batteries, which may pave the way for the development of more refined policy recommendations and practices.

2.2. Application of ISM methodology

The ISM method is widely used in barrier analysis because of its hierarchical modelling technique characteristics (Mathivathanan et al., 2021; Vasanthakumar et al., 2016). For example, Nandal et al. (2019) applied the ISM to determine the key barriers to the implementation of solar energy. Chen et al. (2022) discussed the barriers to the implementation of building integrated photovoltaics and identify the hierarchy between these barriers through the ISM methodology. Balci and Surucu-Balci (2021) and Singh et al. (2023) investigated the barriers to the application of blockchain and identified the structural relationships between these key barriers using ISM and MICMAC methods. Attiany et al. (2023) explored the main barriers to the adoption of Industry 4.0 and analyzed the 10 barriers screened through the ISM and MICMAC methodologies, and finally identified 8 key barriers. Menon and Ravi (2021) investigated the obstacles to sustainable development within the electrical industry and identified 11 barriers based on expert opinion and literature, then applied ISM and MICMAC analysis to determine the hierarchy of barriers and analyzed these barriers in detail.

Recently, literature on barriers to waste recycling has been published. For instance, e-waste management barriers (Kumar and Dixit, 2018; Singhal et al., 2019), and reverse logistics barriers in construction waste management (Wu et al., 2022). Chauhan et al. (2018) applied the ISM methodology and the decision-making trail and evaluation laboratory (DEMATEL) methodology to determine the key barriers to waste recycling and found that the private sector has made a significant contribution to waste recycling. Oluleye et al. (2022) performed a structured review of the barriers to circular management of construction waste, categorized these barriers and then applied the ISM methodology to identify the interrelationships between the barriers. Jaisue et al. (2023) investigated the barriers to the development of waste-to-energy projects in Thailand, categorized the screened barriers into six dimensions: social, economic, technological, environmental, policy and project management, and finally identified the key barriers as coming from the low volume of waste and poor waste management through the ISM and MICMAC methods. Wang et al. (2023) constructed an integrated decision framework model based on ISM, DEMATEL and maximum mean de-entropy algorithm for municipal solid waste management barriers.

Much of the existing literature has demonstrated the effectiveness of using ISM and MICMAC methods to identify the hierarchy and interrelationships between barriers. However, despite the fact that the structured analysis methods of ISM and MICMAC are widely used in a

number of fields, there has been less research to date on the investigation of the interrelationships and hierarchies between the barriers to EVBR. Therefore, in this paper, ISM and MICMAC methods are applied to identify the hierarchical relationships that screen out barriers to EVBR.

2.3. Research gaps

The following research gaps have been identified herein through a review of the above literature.

First, most existing EVBR research were concerned with: i) the economic, social, and environmental impacts of EVBR; ii) the economic and environmental benefits; and iii) the network design for EVBR. These literatures, which have made important contributions, are of particular importance for a further study of the EVBR. However, the analysis of the barriers to the EVBR from a variety of relevant stakeholders is an important research topic that has been neglected in the literature to date. Although there is existing literature that analyses the factors affecting EVBR from different perspectives, there is a lack of literature that comprehensively and systematically discusses the barriers to battery recycling from a circular economy perspective. To this end, this paper discusses the barriers to EVBR to contribute to battery recycling in theory and practice.

Second, because EVBR is influenced by multiple stakeholders, the need to identify the key barriers to EVBR perceived by these participants is not an easy task. Although [Beaudet et al. \(2020\)](#) discussed the drivers for lithium battery recycling in terms of technology, organization and environment, and [Bhuyan et al. \(2022\)](#) explored seventeen barriers and enablers to lithium battery recycling in five dimensions: economic, social, environmental, technological, and policy and regulatory, these factors do not fully represent the barriers to EVBR. Therefore, there is a need to further explore the barriers to EVBR and to analyze the impact of the relationship between the barriers so that reasonable measures can be developed to address the key barriers. Literature on this is limited, for this reason, this paper analyses the interrelationships of EVBR barriers through the ISM and MICMAC methods to fill this research gap.

3. Methodology and results

The aim of this section is to identify potential barriers to EVBR, and analyze the possible hierarchy between these barriers through the ISM and MICMAC methods.

3.1. Identifying barriers to EVBR

Power battery recycling involves knowledge from many fields, including battery technology, environmental protection, laws and regulations, and economic benefits. Therefore, it is necessary to select experts from different fields to participate in the assessment. This is because firstly, experts from different fields have different professional knowledge and perspectives, which can help to fully understand all aspects of power battery recycling, including technical feasibility, environmental impacts, compliance with laws and regulations, and economic benefits, etc. Secondly, by bringing together experts from different fields to conduct the assessment, they can synthesise the opinions and suggestions of all parties and more comprehensively assess the factors of power battery recycling. Finally, experts from different fields have profound professional backgrounds and experience in their respective fields, and can provide professional suggestions on issues related to power battery recycling to ensure the professionalism and accuracy of the assessment. To make the selected barriers to battery recycling more comprehensive and systematic, this paper invites three academic experts, two experts from battery recycling companies, one expert from the power battery manufacturing industry, one expert from a governmental department, and one electric vehicle owner to form an assessment team for barriers to power battery recycling.

The reasons for choosing experts from different fields to form the assessment team on barriers to power battery recycling are as follows: 1) academic experts can provide theoretical support and have in-depth knowledge of power battery recycling technologies and environmental impacts; 2) experts from battery recycling companies have extensive experience in actual operations and can provide practical guidance for the assessment by providing information on actual operational situations, problems and challenges; 3) Power battery manufacturing industry experts understand the production process and materials of power batteries, and can provide professional opinions on the structure and characteristics of power batteries in the assessment; 4) experts from government departments understand relevant policies, regulations and standards, and can guide the assessment team to conduct the assessment within the framework of laws and regulations to ensure the compliance of the assessment work; and 5) electric vehicle owners, as end-users, can provide practical needs and feedback on issues related to power battery recycling, which will help the assessment team to be closer to users' needs and the actual situation.

Barriers to EVBR that were considered to be very important were identified through the literature and comments from the group discussions. The detailed descriptions of the barriers are given below.

3.1.1. Lack of regulatory pressure from government and society (B1)

Although existing policies and regulations have been effective in promoting battery recycling, there are still shortcomings in regulation and enforcement ([Yu et al., 2022](#)). Lack of regulatory pressure from government and society may lead to inadequate battery recycling ([Ciez and Whitacre, 2019](#)). The rise of electric vehicles has brought about a large demand for the use and renewal of batteries, while the recycling and disposal of batteries are related to resource utilization and environmental issues. Without regulatory pressure from the government and society, relevant enterprises may not have sufficient motivation and responsibility to promote battery recycling. These enterprises may not consider themselves obliged to invest in battery recycling technologies, infrastructure and recycling networks to improve battery recycling. It is necessary to strengthen the regulation of EVBR to achieve sustainable development. This involves the concerted efforts of the government, enterprises and the community to ensure that EVBR receives adequate attention and response.

3.1.2. Lack of pressure from the market and demand (B2)

Given the relative newness of the electric vehicle market, the battery recycling market is still in a developmental stage ([Feng et al., 2024](#); [Xu et al., 2022](#)). Although the market share of electric vehicles is growing rapidly, it is still relatively small, especially compared to the market for traditional fuel vehicles. As a result, the need to recycle electric vehicle batteries is also relatively low. Moreover, the challenge of identifying adequate market applications for the materials obtained through the recovery and reuse process poses obstacles to recycling efforts. Consequently, the absence of market pressure and demand has emerged as a significant impediment to battery recycling.

3.1.3. Lack of environmental awareness and education (B3)

Raising awareness about sustainable development and environmental protection can propel the EVBR market towards sustainable growth. Although the public's concern about the finite nature of resources and environmental issues has spawned a demand for circular economy and sustainable development, there is still a relatively large number of the public who lack environmental awareness ([King and Boxall, 2019](#); [Zhou et al., 2007](#)). On the one hand, a majority of the public still lacks a comprehensive understanding of the significance and implications of EVBR, hindering their ability to make meaningful contributions to the cause. On the other hand, there is a notable deficiency in educational initiatives, leading to public confusion regarding the proper methods for recycling and disposing of batteries.

3.1.4. Safety issues during storage and disassembly of batteries (B4)

Electric vehicle batteries are usually high-voltage batteries, in which electrical energy is stored in abundance (Meng et al., 2022). Safe management of batteries during storage and disassembly is very important. If a battery is damaged or operated incorrectly, it can result in short-circuiting, uncontrolled chemical reactions, and other hazards that increase the risk of fire and explosions. Furthermore, batteries contain toxic chemicals such as lithium, nickel, and cobalt, which can be harmful to the environment and human health if not handled properly. Therefore, it is crucial to prevent these substances from leaking and causing pollution to safeguard the environment and public health. As battery recycling involves safety issues, battery recycling requires strict safety measures and handling methods, increasing the complexity and cost of the recycling process.

3.1.5. Lack of efficient collection channels for waste batteries (B5)

One of the main problems in battery recycling for electric vehicles is the lack of effective collection channels for waste batteries (Islam et al., 2022). As the production of new energy vehicles is still relatively low, and at the same time the market for recycling used battery resources is not yet perfect, this has led to insufficient recycling channels for used batteries.

3.1.6. Lack of mature battery recycling technology (B6)

Electric vehicle batteries face certain technical difficulties in the recycling process due to their complex chemical structure and material composition (Sun et al., 2015; Yun et al., 2018). Due to the diverse range of electric vehicle batteries, it is essential to tailor recycling technologies to suit the specific characteristics of each type. Despite ongoing technological advancements, many enterprises and research institutes are actively investigating novel recycling methods, including chemical, physical, and thermodynamic processes, as well as the exploration of new materials. However, a significant obstacle remains in the form of the lack of mature and cost-effective recycling technologies, hindering progress in this field as battery recycling methods are still in the early stages of development.

3.1.7. Lack of mature battery recycling standards (B7)

The improvement of the standard system of EVBR is of great importance to the realization of circular economy (Zeng et al., 2015). Enhancing the standard system can play a crucial role in streamlining the recycling process and methods, boosting recycling efficiency, and minimizing resource wastage and environmental pollution. This needs the formulation of a unified recycling standard, including the type of recycling, recycling conditions, recycling process, etc. Meanwhile, assessment indicators and methods for power battery recycling should be established, including capacity loss of batteries, secondary utilization rate, material recovery rate, etc., in order to assess the effectiveness and sustainability of recycling (Yu et al., 2013). Although some countries and regions have begun to formulate relevant recycling standards and regulations to promote the development of EVBR, which helps to establish more stringent and unified recycling standards, the current immature battery recycling standards have also brought obstacles to battery recycling.

3.1.8. Lack of transparent price mechanism for waste battery recycling (B8)

The lack of a transparent price trading mechanism further limits EVBR (Feng et al., 2024). This is primarily due to the fact that the EVBR market is still in its early stages of development, with an imbalance in the demand and supply relationship. As a result, the price formation mechanism lacks standardization and transparency. Furthermore, the remaining capacity of the electric vehicle battery is crucial for battery valuation; however, it is extremely difficult to accurately assess the degree of electric vehicle battery degradation and there is a lack of compliant companies that assess battery performance. More

importantly, there is a notable absence of a transparent pricing mechanism in the waste electric vehicle battery recycling market. Illicit operators exploit this gap by engaging in competitive bidding, offering inflated prices to gain market share. Consequently, this practice drives a surge of waste electric vehicle batteries towards informal recycling enterprises (Xu et al., 2022). These enterprises often reduce the cost of treating batteries at the expense of polluting the environment, which further aggravates ecological damage.

3.1.9. Lack of mature battery recycling business model (B9)

According to the different recycling main body, there are four main modes of EVBR, namely: battery producer-based mode, vehicle manufacturer-based mode, the third-party recycling mode and the industrial alliance recycling mode. Nevertheless, the technical challenges associated with EVBR and the absence of economies of scale and consistent demand in the recycling market present obstacles for the recycling industry in developing a sustainable business model. More importantly, EVBR involves battery manufacturers, battery transporters, consumers, vehicle producers, downstream ladder utilization companies, recyclers and battery dismantlers, and there is no relatively mature business model yet, everything is still being explored (Reinhardt et al., 2019).

3.1.10. Lack of continuous innovation capability (B10)

Lack of sustained innovation is also an important limiting factor for EVBR. Recycling batteries involves the dismantling, treatment and reuse of batteries, which needs to be supported by advanced technologies and equipment (Wu et al., 2023). However, existing recycling technologies are still in the developmental stage and face certain challenges, including high recycling costs, low recycling efficiency, and complex recycling processes. Business managers need to have sufficient management and innovation capabilities in order to further invest more money and management into technology research and development, improved recycling processes, development of new recycling materials and innovative business models. For example, some companies are exploring innovative models like battery trade-in and leasing to drive the sustainable advancement of EVBR. These efforts have helped to promote innovation and improvement in EVBR technologies, and enhance recycling efficiency and resource utilization.

3.1.11. Lack of more appropriate incentive policies (B11)

Recently, some countries or regions have implemented policies to incentivize battery recycling, such as offering tax incentives and providing subsidies to recycling businesses. However, further improvement and refinement of incentive policies are needed to address the issue of EVBR (Sun et al., 2015). Effective incentive policies play a pivotal role in promoting EVBR. For example, mandatory recycling regulations that requires vehicle owners to recycle their waste batteries when they replace them, to ensure that the batteries are disposed of correctly.

3.1.12. Lack of synergy and cooperation among stakeholders (B12)

EVBR involves multiple stages and multiple stakeholders, including battery manufacturers, automobile manufacturers, recycling companies, and waste battery processors. As the recycling process may involve the distribution of benefits in different segments, it leads to difficulties in reaching an agreement among all parties, affecting synergy and cooperation (Salim et al., 2019). EVBR involves issues such as resource reuse and environmental protection, and requires unified standards and policy support. However, there are currently differences in standards and policies across regions and a lack of unified guidance and norms, making it difficult for stakeholders to synergize and cooperate under a common framework. Moreover, EVBR involves a complex supply chain and information flow, but at present, information sharing is relatively poor, and there is a lack of timely and accurate information exchange between parties. This information asymmetry makes it difficult for all parties to

make effective decisions, limiting the development of synergy and cooperation.

3.1.13. Lack of harmonized technical standards for the battery production industry (B13)

EVBR is also challenged by the lack of harmonized technical standards. Due to the fast-growing electric vehicle market, different manufacturers use different types, sizes and chemistries of batteries, which lead to inconsistent technical standards in the recycling process. The lack of harmonized recycling standards may lead to inefficiencies in recycling, increased costs and environmental pollution. In the absence of uniform standards, it is also difficult for recyclers to judge the performance and lifespan of different brands of battery products, and it also creates an unfair situation for competition between companies.

3.1.14. Lack of cluster benefits (B14)

Effective waste recycling management requires economies of scale and clustering benefits (Zhang et al., 2019). By the same token, EVBR suffers from a lack of cluster benefits. On the one hand, the technology and equipment for EVBR are not mature enough, resulting in high recycling costs; on the other hand, owing to the relatively small size of the electric vehicles market, the number of batteries recycled at present is small, making it difficult to form a large-scale recycling industry chain. Efficient EVBR relies on economies of scale, and industrial clusters can facilitate the realization of these economies. Therefore, until economies of scale in EVBR are achieved, the absence of cluster benefits will continue to be a barrier to EVBR.

3.1.15. Insufficient number of formal battery recyclers (B15)

The technical difficulties of battery recycling and the need for specialized equipment and technical support have resulted in a relatively small number of recyclers (Sun et al., 2015). Furthermore, the number of qualified recyclers is further low due to reasons such as batteries are dangerous goods, the technical difficulty of recycling and the relatively low market demand.

3.1.16. Inconvenient dismantling of batteries (B16)

The inconvenience of removing electric vehicle batteries also poses a challenge for their recycling (Tripathy et al., 2022). Electric vehicle batteries typically consist of a large amount of battery modules, which must be disassembled to recycle retired batteries (Harper et al., 2019). Nevertheless, due to the intricate structure of batteries, disassembly is a challenging task that necessitates specialized equipment and expertise, which adds to the complexity and cost of the operation.

3.1.17. Lack of effective battery recycling management experience (B17)

Experience in battery recycling management is very useful for EVBR. However, there is relatively little experience in the management of battery recycling (Azadnia et al., 2021), but it is beginning to attract attention. Effective experience in managing battery recycling is very important to protect the environment and to recycle resources. Because having rich experience in battery recycling management can help establish a perfect recycling network and recycling system, it can maximize the resource utilization of electric vehicle batteries and promote sustainable development.

3.1.18. Lack of support from top management (B18)

A key barriers to EVBR is the lack of support from top management in companies and government (Tripathy et al., 2022). Top management can provide financial support and resources, as battery recycling requires the establishment of recycling facilities, the purchase of recycling equipment, and technological research and development, all of which require significant investment. In addition, top management can also promote industry collaboration and break down information barriers, thereby promoting cooperation and information sharing among all parties and accelerating the innovation and promotion of recycling

technologies.

3.1.19. Costs and benefits (B19)

EVBR involves the process of recovering and treating used batteries, which includes collection, sorting and remanufacturing. Besides, recycling batteries requires the establishment of a comprehensive recycling system, including collection, storage, sorting and transport. All these links require substantial financial support. As the current quantity of battery recycling is small, it is difficult to create economies of scale, and therefore the issue of the cost and benefits of battery recycling has become a major barrier that restricts the development of EVBR towards a circular economy (Zhou et al., 2007).

3.1.20. Lack of widespread publicity on battery recycling (B20)

Many public currently have limited understanding of the concept of EVBR and related policies, and there is a lack of widespread publicity and education. This may be due to the fact that the market share of electric vehicles is still small compared to that of fuel vehicles, and hence there is relatively little publicity on EVBR. In addition, the relatively small and dispersed target population may result in less effective publicity. However, extensive publicity should be carried out to raise awareness and raise the importance of battery recycling.

3.2. Study methodological framework

To achieve the stated research goals, this study uses a hybrid methodology based on ISM and MICMAC. Potential barriers to EVBR were first identified through a systematic literature survey and experts opinion, and then the ISM was applied to determine the structured self-interaction matrix (SSIM), and a hierarchical map between the barriers to battery recycling was constructed (Yadav et al., 2020). Finally, MICMAC is used to categorize these barriers for further recommendations, and the framework structure of the methodology herein is given in Fig. 1.

Step 1. This paper identifies the main barriers to implementing EVBR, based on a review of the literature and expert opinion, as outlined in Section 3.1.

Step 2. Experts identified the relationship between the barriers through multiple rounds of discussions and determined the SSIM. In the SSIM, this paper uses capital letters V, A, X, and O to express the relationship between barrier i and barrier j . The symbols are expressed with the following meanings: 1) V denotes that barrier j is affected by barrier i ; 2) A denotes that barrier i is affected by barrier j ; 3) X indicates that barrier i and barrier j interact with each other; and 4) O indicates that there is no effect between barrier i and barrier j . Step 3. Determine the reachability matrix on the basis of step 2 by representing the symbols in the SSIM with the numbers 0 and 1. The rules for assigning numerical values corresponding to each letter are as follows: 1) In SSIM, if cell (i, j) is represented by the letter V, then the cell (i, j) is assigned the value 1 and cell (j, i) is assigned the value 0; 2) In SSIM, if cell (i, j) is represented by the letter A, then the cell (i, j) is assigned the value 0 and cell (j, i) is assigned the value 1; 3) In SSIM, if cell (i, j) is represented by the letter X, then the cell (i, j) and cell (j, i) is assigned the value 1; and 4) In SSIM, if cell (i, j) is represented by the letter O, then the cell (i, j) and cell (j, i) is assigned the value 0.

Step 4. Level partitions of barriers to EVBR. The reachability sets and antecedent sets can be used to obtain the level partitions of EVBR barriers. Then find the intersection sets of the reachability sets of barrier and antecedent sets of barrier. In ISM, the barrier with the same reachability sets and the intersection sets is considered to be a level 1. Barriers in level 1 are then eliminated and the iteration continues to obtain the second level of barrier classification and so on until all the barrier classifications are found.

Step 5. Determine the hierarchical directed graph between barriers.

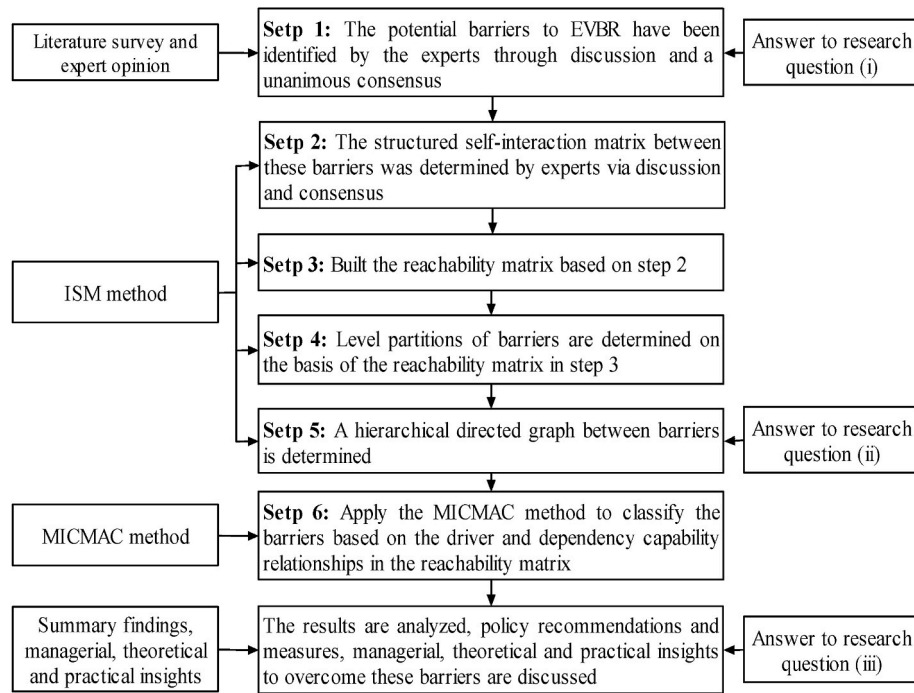


Fig. 1. Study methodological framework adopted in this paper.

Step 6. Apply the MICMAC method to categorize the EVBR barriers based on the driver and dependency capability relationships in the reachability matrix. A detailed description of the classification criteria is shown in Section 3.4.

3.3. Calculation process of the ISM method

This section describes the calculation process of the ISM method and identifies the hierarchical relationships between EVBR barriers and draws a directed graph of the barriers.

3.3.1. Structured self-interaction matrix

The eight experts evaluated the relationships between the barriers and applied the symbols V, A, X, and O to construct the adjacency matrix, i.e. SSIM, according to the introduction in step 2, and the results are given in Table 1. The assessment team meets as a group to identify specific goals for consensus to ensure that everyone is working in the

same direction; the expert team then discusses and debates in a conference-style manner, sharing ideas, making suggestions, and communicating different opinions; and ultimately, the expert team is required to vote on the assessment to determine the outcome of the assessment based on the principle of minority rule.

3.3.2. Reachability matrix

The symbols in Table 1 are used to build the initial input adjacency matrix A according to the assignment rule in Step 3, as shown in Table 2. Based on the initial adjacency matrix A in Table 2, the initial reachable matrix IR is obtained by adding it to the unit matrix I , i.e. $IR = A + I$, and then the Boolean algebra rules are used to multiply the matrix IR until two matrices of neighbouring idempotents are equal, and the matrix with the lowest idempotent among the equal matrices is the reachability matrix. The final reachability FR matrix is derived by calculating the initial reachable matrix, i.e. $FR = IR^n = IR^{n+1}$, as shown in Table 3. Besides, driving power (DRP) and dependence power (DEP) were

Table 1

Structured self-interaction matrix for EVBR barriers.

	B20	B19	B18	B17	B16	B15	B14	B13	B12	B11	B10	B9	B8	B7	B6	B5	B4	B3	B2
B1	O	V	A	O	O	O	O	O	O	A	V	V	O	V	O	O	O	X	O
B2	O	V	A	O	O	O	V	O	V	O	O	V	O	O	V	V	O	A	
B3	X	O	O	O	O	O	O	O	O	O	O	V	O	O	O	O	O		
B4	O	V	O	O	X	O	O	A	O	O	O	O	O	A	A	O			
B5	O	X	O	O	O	A	O	O	O	A	O	X	V	O	O				
B6	O	V	A	O	V	V	O	A	O	A	A	V	O	X					
B7	O	V	A	O	O	O	O	A	O	A	A	V	O						
B8	A	O	O	O	O	O	O	O	O	O	O	V							
B9	O	V	O	O	O	O	O	O	X	O	A								
B10	O	V	A	A	O	O	O	O	O	O									
B11	O	V	V	V	O	V	V	V	V										
B12	O	V	A	A	O	A	X	O											
B13	O	O	O	O	V	O	O												
B14	O	V	O	A	O	O													
B15	A	O	O	O	O														
B16	O	V	O	O															
B17	O	V	X																
B18	O	V																	
B19	O																		

Table 2
Initial adjacency matrix for EVBR barriers.

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
B1	0	0	1	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0
B2	0	0	0	0	1	1	0	0	1	0	0	1	0	0	0	0	0	0	1	0
B3	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0
B5	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0
B6	0	0	0	1	0	0	1	0	1	0	0	0	0	0	1	1	0	0	1	0
B7	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0
B8	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
B9	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
B10	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	1	0
B11	1	0	0	0	1	1	1	0	0	0	0	1	1	1	1	0	1	1	1	0
B12	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0
B13	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0
B14	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
B15	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
B16	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
B17	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	1	1	0
B18	1	1	0	0	1	1	0	0	0	1	0	1	0	0	0	0	1	0	1	0
B19	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B20	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0

Table 3
Final reachability matrix for EVBR barriers.

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	DRP
B1	1	1*	1	1*	1*	1*	1	1*	1	1	0	1*	0	1*	1*	1*	0	0	1	1*	16
B2	0	1	0	1*	1	1	1*	1*	1	0	0	1	0	1*	1*	1*	0	0	1	0	12
B3	1	1	1	1*	1*	1*	1*	1*	1	1*	0	1*	0	1*	1*	1*	0	0	1*	1	16
B4	0	0	0	1	1*	0	0	1*	1*	0	0	1*	0	1*	0	1	0	0	1	0	8
B5	0	0	0	0	1	0	0	1	1	0	0	1*	0	1*	0	0	0	0	1	0	6
B6	0	0	0	1	1*	1	1	1*	1	0	0	1*	0	1*	1	1	0	0	1	0	11
B7	0	0	0	1	1*	1	1	1*	1	0	0	1*	0	1*	1*	1*	0	0	1	0	11
B8	0	0	0	0	1*	0	0	1	1	0	0	1*	0	1*	0	0	0	0	1*	0	6
B9	0	0	0	0	1	0	0	1*	1	0	0	1	0	1*	0	0	0	0	1	0	6
B10	0	0	0	1*	1*	1	1	1*	1	1	0	1*	0	1*	1*	1*	0	0	1	0	12
B11	1	1*	1*	1*	1	1	1	1*	1*	1*	1	1	1	1	1	1*	1	1	1	1*	20
B12	0	0	0	0	1*	0	0	1*	1	0	0	1	0	1	0	0	0	0	1	0	6
B13	0	0	0	1	1*	1	1	1*	1*	0	0	1*	1	1*	1*	1	0	0	1*	0	12
B14	0	0	0	0	1*	0	0	1*	1*	0	0	1	0	1	0	0	0	0	1	0	6
B15	0	0	0	0	1	0	0	1*	1*	0	0	1	0	1*	1	0	0	0	1*	0	7
B16	0	0	0	1	1*	0	0	1*	1*	0	0	1*	0	1*	0	1	0	0	1	0	8
B17	1*	1*	1*	1*	1*	1*	1*	1*	1*	1	0	1	0	1	1*	1*	1	1	1	1*	18
B18	1	1	1*	1*	1	1	1*	1*	1*	1	0	1	0	1*	1*	1*	1	1	1	1*	18
B19	0	0	0	0	1	0	0	1*	1*	0	0	1*	0	1*	0	0	0	0	1	0	6
B20	1*	1*	1	1*	1*	1*	1*	1	1*	1*	0	1*	0	1*	1	1*	0	0	1*	1	16
DEP	6	7	6	13	20	11	11	20	20	7	1	20	2	20	12	13	3	3	20	6	

Note: * represents the transitive links.

computed for each barrier in Table 3. The sum of rows for each barrier is DRP, while the sum of columns is DEP.

3.3.3. Level partitions of barriers

According to step 4, the final level partitions of EVBR barriers obtained are shown in Table 4.

3.3.4. Hierarchical directed graph

After obtaining a hierarchical level of the EVBR barriers, a directed graph can be used to represent the structure of these barriers, as shown in Fig. 2. The hierarchy of EVBR barriers consists of seven levels, and there is an interrelationship between these barriers. The top level contains seven barriers, which are lack of efficient collection channels for waste batteries (B5), lack of transparent price mechanism for waste battery recycling (B8), lack of mature battery recycling business model (B9), lack of synergy and cooperation among stakeholders (B12), lack of cluster benefits (B14), and costs and benefits (B19). These barriers are directly or indirectly affected by other barriers. In the ISM hierarchy diagram, the levels downwards represent the causes of the previous level. In this paper, the lowest level barrier is lack of more appropriate

incentive policies (B11).

3.4. Classification of barriers by using MICMAC method

The EVBR barriers were categorized according to the DEP and DRP values for each barrier in Table 2, as shown in Fig. 3. Twenty barriers were classified into four categories; however, none of the barriers were autonomous barriers. The second quadrant is the dependent barriers, indicating that the barriers have a high dependency force and a low drive. The third quadrant is the linkage barriers, indicating barriers have a high dependency force and a high drive. The fourth quadrant is the driver barriers, indicating barriers have a low dependency force and a high drive. The categorization results in Fig. 3 are important for practice as stakeholders can be better guided to develop sound measures based on the drivers and dependencies of these barriers.

4. Discussion

This section discusses the description of results, comparison with other methods, theoretical implications, managerial and practical

Table 4
Hierarchical classification of EVBR barriers.

Levels	Barriers to EVBR
First level	Lack of efficient collection channels for waste batteries (B5) Lack of transparent price mechanism for waste battery recycling (B8) Lack of mature battery recycling business model (B9) Lack of synergy and cooperation among stakeholders (B12) Lack of cluster benefits (B14) Costs and benefits (B19)
Second level	Safety issues during storage and disassembly of batteries (B4) Insufficient number of formal battery recyclers (B15) Inconvenient dismantling of batteries (B16)
Third level	Lack of mature battery recycling technology (B6) Lack of mature battery recycling standards (B7)
Fourth level	Lack of pressure from the market and demand (B2) Lack of continuous innovation capability (B10) Lack of harmonized technical standards for the battery production industry (B13)
Fifth level	Lack of regulatory pressure from government and society (B1) Lack of environmental awareness and education (B3) Lack of widespread publicity on battery recycling (B20)
Sixth level	Lack of effective battery recycling management experience (B17) Lack of support from top management (B18)
Seventh level	Lack of more appropriate incentive policies (B11)

insights, and measures to overcome the barriers.

4.1. Description of results

As shown in Fig. 2 and Table 4, barrier B11 (lack of more appropriate incentive policies) is at the bottom of the EVBR barriers, which is a strong confirmation that policies are of significant importance in promoting battery recycling. Thus, it is very important to develop an effective EVBR policy to protect the environment, promote economic development and enhance social responsibility. Barrier B11 has an impact on barriers B17 (lack of effective battery recycling management experience) and B18 (lack of support from top management), for

example, incentive policies can help top management to further realize the determination of the state and society to recycle batteries, and then push top management to invest more resources in the construction of battery recycling technology, recycling standards and recycling system. Barrier B18 has a direct impact on barrier B1 (lack of regulatory pressure from government and society), because if the top managers of the government and companies are strongly supportive of the battery recycling business, then the government is likely to be supportive of the regulation of the battery recycling business and companies will be interested in further regulating the battery recycling business. Furthermore, barrier B3 (lack of environmental awareness and education) affects barrier B2 (lack of pressure from the market and demand), and the environmental awareness of the public also has a major impact on EVBR, as the environmentally aware public tends to recycle batteries through a formal channels, which increases the battery recycling rate.

Barriers B6 (lack of mature battery recycling technology) and B7 (lack of mature battery recycling standards) have a high dependency and driving force and significantly affect other barriers, while other barriers also significantly affect barriers B6 and B7. This is because the difficulty of dismantling batteries can be significantly reduced and the safety of dismantling improved by having mature battery recycling technology and recycling standards. Batteries are a hazardous material that can explode or burn if they are not dismantled properly, and companies are usually required to make a more economic investment to reduce the possibility of a hazard. It is therefore necessary to establish a set of mature battery recycling technologies and standards.

As shown in Fig. 3, there are no barriers in the first quadrant with weak dependencies and weak drivers, which further confirms that the barriers proposed in this paper all have an impact on the system and all play an important role. Within the first level of barriers in Fig. 2, decision makers need to pay particular attention to barriers B5 (lack of efficient collection channels for waste batteries), B8 (lack of transparent price mechanism for waste battery recycling), B9 (lack of mature battery recycling business model), B12 (lack of synergy and cooperation among stakeholders), B14 (lack of cluster benefits) and B19 (costs and benefits).

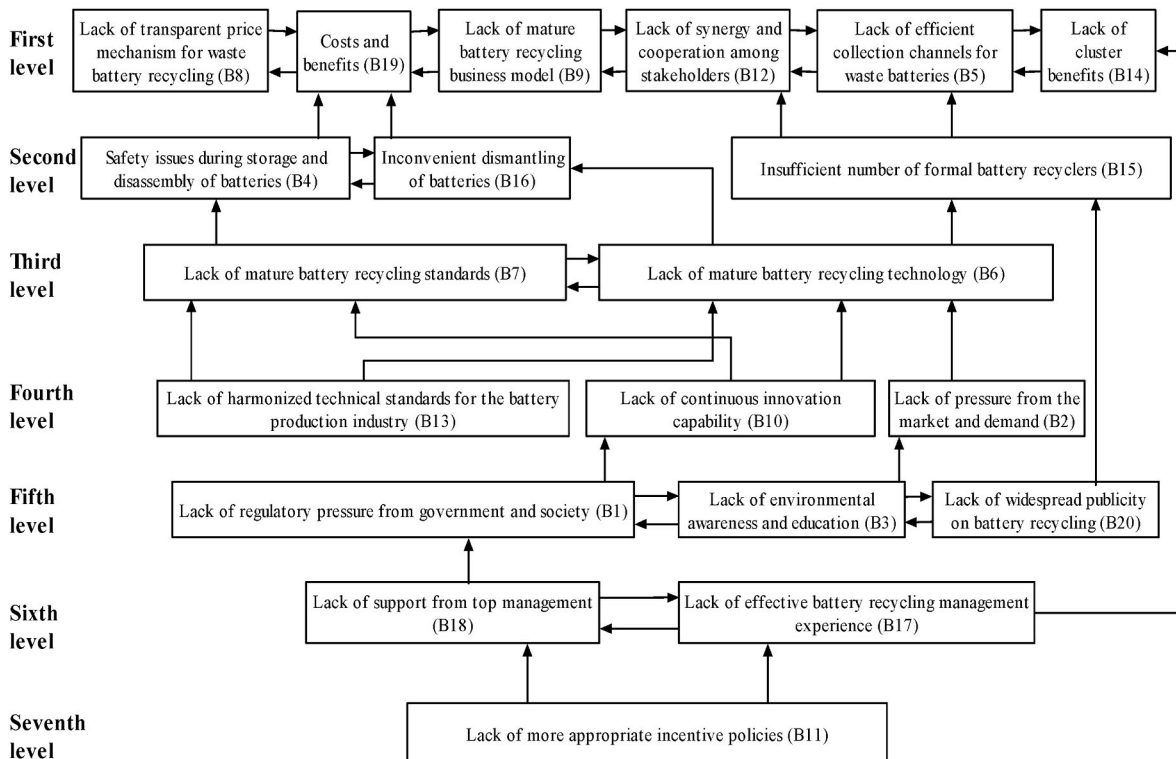


Fig. 2. Hierarchical directed graph of EVBR barriers.

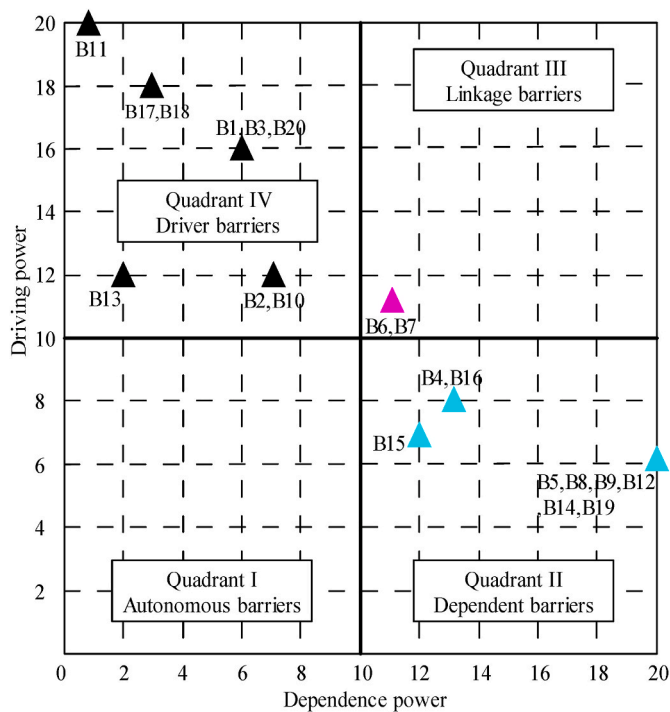


Fig. 3. MICMAC analysis for EVBR barriers.

Furthermore, barriers in the fourth quadrant of Fig. 3, such as B1, B2, B3, B10, B11, B13, B17, B18 and B20, are considered to be critical barriers to the achievement of sustainable development in EVBR, as they have a strong driving force that can effectively influence other barriers and therefore require special attention from various stakeholders.

This paper provides a comprehensive analytical framework model for identifying potential barriers to EVBR, and although the methodology presented in this paper has been applied to other fields, there is little literature that comprehensively explores the barriers to EVBR from multiple stakeholder subjects. For example, [Sasikumar and Haq \(2010\)](#) examined the barriers to battery recycling in the reverse supply chain. They identified ten potential barriers to battery recycling in reverse logistics from an original equipment manufacturer perspective, of which the lack of political will barrier is similar to the lack of more appropriate incentive policies (B11) barrier mentioned in this paper, and they also identified lack of political will is a key barrier affecting battery recycling, which is consistent with the findings of this paper. And other barriers also share similarities with the barriers mentioned in this paper, such as financial constraints and costs and benefits (B19); lack of effective communication and lack of widespread publicity on battery recycling (B20); lack of knowledge and lack of environmental awareness and education (B3).

4.2. Comparison with other methods

[Biswas and Gupta \(2019\)](#) applied the DEMATEL methodology to identify the relationship between the barriers to the implementation of blockchain technology. [Raj et al. \(2008\)](#) applied the ISM methodology to identify barriers to the implementation of flexible manufacturing systems and identified the interrelationships between the barriers. [Kamble et al. \(2018\)](#) and [Dixit and Kumar \(2024\)](#) employed ISM and MICMAC methodologies to explore the potential barriers to the implementation of Industry 4.0 and their interrelationships. [Kazancoglu et al. \(2024\)](#) explored barriers to renewable energy technologies and identified causal relationships between barriers using ISM and MICMAC techniques. Most of this literature has been studied using the ISM approach because of the important features that the ISM approach has: 1) the ISM approach is

interpretive due to the use of group opinions to determine the correlation between different barriers; 2) the ISM approach is relational as well as structural, allowing for a hierarchical structure to be obtained from the complexity of the relationships; 3) the ISM is a modelling approach that allows for the graphical visual presentation of the relationships between the various elements, which makes it easy to understand and communicate; and 4) the ISM approach takes into account the various elements of the system and analyses the complexity of the relationships between the various elements, which helps in the identification of the key elements. Furthermore, the MICMAC technique is used to identify factors of high influence within the system and to conduct comprehensive assessments and analyses. It is able to identify high-impact factors within the system, help identify key factors and carry out effective optimization and adjustment. Hence, the ISM and MICMAC techniques used in this paper to identify potential barriers to EVBR can provide multidimensional and comprehensive analyses that can help guide practical operations and decision-making.

4.3. Theoretical implications

Circular economy is an economic model focused on resource recycling that achieves sustainable economic development by reducing resource consumption and waste generation; and EVBR is the collection, reuse or reprocessing of used batteries to achieve resource recycling. However, there are barriers to EVBR and this work is the first to study the barriers to EVBR and use ISM and MICMAC methods to analyze relationships between barriers, thus this study contributes to EVBR regarding barrier analysis and adds to the literature on barrier analysis. This paper further clarifies the barriers to EVBR and paves the way for the realization of large-scale battery recycling, thus making this paper an important contribution to the literature promoting EVBR towards the development of a circular economy.

Many scholars have applied the theory of ISM and MICMAC methods for barrier analysis, and this literature confirms the effectiveness and scientific validity of ISM and MICMAC methods for barrier analysis. The results of this paper show that overcoming barriers B1, B2, B3, B10, B11, B13, B17, B18 and B20 can have a significant effect on improving the EVBR, and this study confirms the scientific validity of the ISM and MICMAC methodologies in terms of portraying hierarchical and influential relationships between barriers. Furthermore, before this paper, [Tripathy et al. \(2022\)](#) was one of the few contributions that discussed the factors influencing EVBR at the technological, environmental and organizational levels; and [Tripathy et al. \(2023\)](#) discussed the key drivers of lithium battery recycling for electric vehicles regarding environmental, economic and social and dimensions. However their study focuses more on the factors that drive EVBR, and we explore the barriers to EVBR that have been discussed more broadly. As a result, this paper provides a further exploration of the barriers to the implementation of EVBR from a theoretical point of view.

[Azadnia et al. \(2021\)](#) identified eight barriers to the implementation of reverse logistics for electric vehicles lithium batteries in from a manufacturer's perspective, which are important for EVBR, however, due to the large number of stakeholders involved in EVBR, some potential barriers were not identified. In this paper, twenty barriers to EVBR have been identified through extensive expert discussions and literature reviews. The results show that barrier B11 is a key factor affecting EVBR, whereas [Azadnia et al. \(2021\)](#) identified market and social barriers, which directly affects policies and regulations, as a key factor affecting reverse logistics of lithium batteries, whereas the study in this paper identifies the lack of more appropriate incentive policies as a key barrier affecting EVBR. This is because the policy on EVBR is closely related to the market. The development of related industries and the creation of market demand can be promoted by the formulation of an EVBR policy by the government. Policies can provide economic incentives, such as subsidies and tax breaks, to attract companies to participate in the EVBR business. The government can also establish a

complete EVBR industry chain by promoting the cooperation and synergistic development of electric vehicle manufacturers, battery producers, recycling enterprises and reprocessing enterprises. This will promote technological innovation, resource sharing and industrial upgrading. Therefore, the EVBR policy can guide and promote the development of the market and realize the sustainable development of the electric vehicle industry.

4.4. Measures to overcome the barriers

Given the complexity and significance of EVBR, it is imperative to develop more effective policies and measures. Overcoming these barriers necessitates collaborative efforts from government, industry, and academia. Therefore, this paper proposes a set of measures from three distinct perspectives – government, industry, and academia – to overcome these barriers.

At the government level, the first is to formulate clear policies and regulations to standardize the process and criteria for recycling used batteries. On this basis, provide financial support and economic incentives to further encourage electric vehicle manufacturers and recycling companies to actively participate in battery recycling. In addition, setting up a dedicated fund or subsidy scheme to support the research and development of recycling technologies and equipment upgrading is an incentive measure. Government departments should guide and establish a comprehensive recycling system to promote the cooperation and collaboration between battery recycling enterprises and related industrial chains. More importantly, government departments should also strengthen supervision and enforcement to ensure that battery recyclers comply with regulations and perform their social responsibilities. It should not be overlooked that training and education provided by government departments and enhanced publicity and awareness can also promote the development of the waste battery recycling industry.

At the industry level, battery recyclers and manufacturers have increased their investment in setting up specialized EVBR management teams and providing training and guidance to improve management experience and skills. Enterprises should increase investment in R&D of EVBR technology to improve the efficiency and safety of EVBR through improved recycling methods and equipment, process optimization and technological innovation; on the other hand, enterprises should strengthen their awareness of corporate environmental responsibility and take EVBR as part of their corporate social responsibility to ensure a closed-loop battery recycling chain. At the same time, they should not only strengthen the training of professionals and improve the R&D and application level of battery recycling technology, but also enhance the environmental protection and safety protection during the battery recycling process, and formulate strict battery recycling standards and control measures to ensure that the environmental pollution and safety hazards during the recycling process are effectively controlled. In addition, enterprises can also consider providing consumers with incentives for recycling batteries, such as recycling points and coupons, to mobilize consumers to participate in battery recycling. More importantly, enterprises should establish convenient battery recycling channels, such as through e-commerce platforms, electric vehicle manufacturers and other channels, to facilitate consumers to send back or send out used batteries.

At the academic level, academics should, on the one hand, devote themselves to researching technologies and methods to reduce the cost of recycling, such as improving the recycling process, increasing the efficiency of recycling, and lowering the cost of recycling equipment; on the other hand, improving the reuse rate of batteries after recycling is also one of the main focuses of academics' attention. Meanwhile, researchers should continue to explore how to extend the battery life by improving the battery design, and how to use the recycled materials in the manufacture of new batteries to achieve a higher recycling rate. In addition, academia should join forces with industry in a concerted effort

to find safer and more environmentally friendly high-temperature processing technologies to reduce potential contamination. Another important research is that academics should explore the promotion of IoT, big data and other technologies in battery recycling to achieve intelligent management and monitoring. The results of academic research are important for overcoming barriers to EVBR and are expected to provide more feasible and sustainable solutions for the EVBR industry in the future.

4.5. Managerial and practical insights

Barrier B11 (lack of more appropriate incentive policies) is crucial for EVBR to move towards circular economy development, as it will have a long term profound impact on the other barriers. To overcome this barrier, the Chinese government has introduced policies and regulations. For example, 1) the Chinese government encourages the recycling and utilization of electric vehicle batteries by proposing a series of supportive policies, such as financial support, tax incentives and subsidy policies, aiming to promote the development of EVBR; 2) China has implemented a battery recycling responsibility system, which requires electric vehicle manufacturers to use recyclable batteries that comply with the national standards and requirements for electric vehicles put on the market, and at the same time assume the battery recycling and disposal responsibilities; and 3) China encourages the construction of a battery recycling network to achieve full coverage of the battery recycling system through the establishment of recycling stations, recycling networks and recycling channels, etc., so as to improve the efficiency and feasibility of battery recycling. The enactment of these policies has largely facilitated EVBR, however, as the market develops, more effective policies need to be developed to further realize economies of scale in battery recycling.

In practice, attention must be paid to barriers B17 and B18, as lack of effective battery recycling management experience and lack of support from top management may have a significant impact on EVBR in terms of funding, policy, technology, markets and other aspects, limiting its scale-up and efficiency. For example, top management is often a key factor in determining funding and resource allocation. Without top management support, EVBR may face insufficient funding, leading to limitations in the construction and operation of recycling systems. Lack of top management support may not only lead to a lack of development and enforcement of relevant policies and regulations, thus reducing support and regulation of EVBR, but also to a lack of professional technical and managerial guidance, making the scale and efficiency of EVBR limited. Furthermore, top management is usually closely associated with marketing and cooperation opportunities. Lack of top management support may lead to lack of marketing and cooperation opportunities, limiting the popularity and promotion of EVBR in the market. Hence, the introduction of top management support and professional management experience should be focused on in the promotion and implementation of EVBR.

5. Conclusions

This paper investigates the barriers to EVBR from a stakeholder perspective, identifies twenty major barriers affecting battery recycling, and classifies these barriers into seven levels of structural modelling using the ISM methodology, thus providing insights into the interactions between the various factors involved in the recycling of electric vehicles batteries, and revealing the root causes and key influences that lead to the recycling barriers. In addition, by applying the MICMAC analysis method, the twenty identified barriers to EVBR are classified into three categories, namely, dependency barriers, linkage barriers and driving barriers. More importantly, this paper provides measures for governments, enterprises and academics to overcome EVBR barriers, implement responsible EVBR management, and contribute to the sustainable development of the electric vehicles industry while promoting resource

recycling and environmental protection. Despite some progress in EVBR management, there is still a significant gap compared to the requirements of a circular economy. In addition, overcoming EVBR barriers requires more efforts from all parties as they are interconnected.

While this paper has uncovered key findings on barriers to EVBR, there are still some limitations that need to be addressed. Firstly, although the ISM approach effectively illustrates the connections between EVBR barriers, the absence of quantitative impact relationships may restrict the depth of analysis in this paper. Therefore, exploring alternative methods to quantify these relationships in future studies would be particularly valuable. Secondly, as recycling technologies, channels, and standards continue to advance, the barriers to EVBR may evolve over time. This suggests that the barriers to EVBR could vary across different time periods, underscoring the need to update this work for future research. Thirdly, the study data relied on subjective judgments from experts in diverse fields. Considering the weighting factors assigned to these experts in future studies could enhance the validation of results. Moreover, conducting empirical studies to delve into the primary barriers to EVBR may offer a more engaging avenue for research.

CRedit authorship contribution statement

Jianghong Feng: Writing – original draft, Software, Resources, Project administration, Methodology, Formal analysis, Data curation.
Ping Guo: Resources, Investigation, Formal analysis, Data curation.
Guangyi Xu: Visualization, Validation, Software, Investigation.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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Within-group differences: Differentiated Chinese expatriate-HCN interactions and the influence of human resource management practices

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ABSTRACT

With the increasing global presence of Chinese firms, the number of Chinese expatriates has increased. Concurrently, academic interest in identifying factors that influence the relationship between expatriates and host country nationals (HCNs) has grown. However, less attention has been paid to the dynamic interactions between Chinese expatriates and HCN subcategories. This study explores the differentiated Chinese expatriate-HCN interactions and potential influence of organizational human resource management (HRM) practices on this dynamic. We conducted a single case study and collected data through semi-structured interviews with 33 Chinese expatriates. The findings suggested that Chinese expatriates interacted differently with different HCN subcategories. Specifically, their interactions with HCN employees (customers) were need-oriented (utilitarian-oriented). Organizational HRM practices had a double-edged effect on the dynamic interaction process. Overall, this study offers a nuanced and highly contextualized understanding of the significance of expatriate-HCN interactions and role of organizational HRM practices in facilitating this process.

1. Introduction

As economic globalization has progressed, numerous studies have focused on expatriate assignments in multinational enterprises (MNEs) (Ado, Wanjiru, & Su, 2021). These studies predominantly focused on expatriates originating from developed countries (Gonzalez-Loureiro, Kiessling, & Dabic, 2015; He, An, & Berry, 2019; Nadeem & Mumtaz, 2018). However, less is known about the experiences of expatriates from developing countries, such as mainland China, despite being an economic superpower with unprecedented interactions with the rest of the world (Fang & Faure, 2011; Kozhakhmet & Nurgabdeshev, 2022; Zhong, Zhu, & Zhang, 2015), and being increasingly active in foreign direct investment (FDI) (Yao, 2014; He et al., 2019). Under China's "going out" and "The Belt and Road" policies, Chinese investors have established many enterprises worldwide via FDI. With the global expansion of Chinese MNEs (CMNEs), an increasing number of Chinese managers are working abroad as expatriates (Lin, Li, & Roelfsema, 2018; Nadeem & Mumtaz, 2018; Panda, Pradhan, & Singh, 2022). The uniqueness of Chinese culture highlights the importance of expatriates' adjustment in foreign countries; thus, it is worthwhile to pay attention to the cross-cultural adjustment of Chinese expatriates (He et al., 2019;

Jannesari & Sullivan, 2022).

Cross-border interactions are not isolated but are situated within cultural contexts that influence social interactions, which are crucial for expatriate adjustment (Morrison, Chen, & Salgado, 2004). Cultural factors, such as the country of origin, significantly affect adjustment outcomes (Waxin, 2004). Previous research on Western expatriates may not generalize to other cultural contexts, as management practices are culturally contingent (Kim & Slocum, 2008; Hofstede, 2007). Specifically, the literature on Western expatriates is not directly applicable to Chinese expatriates due to the unique cultural emphasis on *guanxi*, or interpersonal networks, which is a fundamental aspect of Chinese collectivism (Guo, Rammal, Benson, Zhu, & Dowling, 2018; He et al., 2019). This cultural dimension distinctly influences the Chinese workplace, setting it apart from other countries in terms of work and social dynamics (Chuang, Hsu, Wang, & Judge, 2015). Furthermore, communication barriers, particularly between expatriates and host country nationals (HCNs) significantly impact relationship quality (Van Bakel, van Oudenhoven, & Gerritsen, 2015; Fee, Heizmann, & Gray, 2017; Shen & Kram, 2011). The communication styles of people in most Western countries are characterized by low-context cultures emphasizing explicit communications; however, the communication styles of

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Chinese people are characterized by high-context cultures emphasizing implicit communication, as suggested by Hall (1976). Hence, deciphering implied meanings or engaging in “reading between the lines” holds significant esteem within Chinese cultural norms (Fang & Faure, 2011).

Expatriates, as a special category of newcomers, are typically socialized through interpersonal and group-based interactions (Batišć & Kaše, 2022), which help them acquire information and learn the ropes (Jokisaari & Vuori, 2018). HCNs are a specific and important source of interact that offer a scope for cultural learning and flow of resources for expatriates, such as social support (Kang & Shen, 2018; Osman-Gani & Rockstuhl, 2008; Toh et al., 2012), and play an important role in expatriate success (Johnson, Kristof-Brown, Van Vianen, De Pater, & Klein, 2003). Indeed, over the past few decades, scholars are increasingly interested in identifying the factors that influence the relationship between expatriates and HCNs (e.g., Arman & Aycan, 2013; Bruning, Sonpar, & Wang, 2012; Toh & DeNisi, 2007; Toh & Srinivas, 2012; Van Bakel, 2019; Varma, Budhwar, & Pichler, 2011). The existing literature has primarily concentrated on personal and interpersonal factors, such as personality (Caligiuri, 2000; Johnson et al., 2003) and social categorization (Arman & Aycan, 2013; Varma et al., 2011), to understand the determinants of HCNs’ willingness to assist expatriates. However, there is a paucity of research examining the influence of expatriates’ attitudes and behaviors towards HCNs (Van Bakel, Gerritsen, & Van Oudenhoven, 2014; Van Bakel, 2019).

Additionally, the nature of interactions between expatriates and HCNs has been underexplored (Guo, Rammal, & Pereira, 2021; Mahajan & Toh, 2014; Takeuchi, 2010), and it remains unclear whether these interactions vary among different subcategories of HCNs and how they relate to expatriate adjustment. In a systematic review of HCNs within MNEs, Michailova, Fee, and DeNisi (2023) revealed that few studies have explicitly addressed or even acknowledged the differences among HCNs. Given that cross-cultural interactions are context-dependent, expatriates’ behaviors are expected to differ based on situational contexts (Ward, 2008). To obtain a comprehensive understanding of expatriate–HCN interactions, a broader and more diverse range of HCNs need to be examined (Michailova et al., 2023). Thus, uncovering the differences between HCNs and what these differences might mean for the expatriates who interact with them are important research questions.

Moreover, the organizational factors that predict HCNs’ willingness to help expatriates have been largely neglected (Shen, Kang, & Dowling, 2018), as have organizational factors that shape expatriates’ attitudes and behaviors towards HCNs. This gap highlights the need for additional theoretical and empirical investigations. Organization-assigned expatriates (OEs) receive considerable support from their parent company when joining an overseas subsidiary, such as relocation services or local housing (Guo et al., 2021). In particular, CMNEs’ expatriation management system is characterized by integrated monetary and spiritual incentives (i.e., ways of satisfying people’s social and psychological needs through non-material or non-financial means to stimulate good behavior), centralized control, and collective support (Rui, Zhang, & Shipman, 2016). The organization’s HRM practices and work culture may influence OEs’ interactions with HCNs (Mahajan & Toh, 2014). Recent research indicates that the “expatriate bubble” or “simulated home” model, developed by CMNEs, mimics the home country’s layout and cultural elements. This approach effectively reconstructs the work, living, and communication environment for Chinese expatriates, thereby addressing their adjustment challenges and influencing the interactions between Chinese expatriates and HCNs (He et al., 2019; Huang, Liu, Zhao, He, & Ding, 2022). Focusing on the influence of HRM practices on expatriate–HCN interactions is crucial, as understanding this can help MNEs develop and implement more effective HRM practices to enhance expatriate success.

This study partially addresses this need by meticulously examining the interactions between Chinese expatriates and different HCN subcategories, and the potential influence of HRM practices on this

dynamic. HCNs can be divided into different subcategories. We only focus on the locals with whom expatriates come into contact because of their work activities: local colleagues and customers. Meanwhile, our contributions to the literature are three-fold. First, this study extends our knowledge of expatriate adjustment by utilizing an under-researched sample of Chinese expatriates and providing detailed explanations of the rarely studied but inspiring Chinese cultural context. Second, it examines the under-researched yet important interactions between Chinese expatriates and different HCN subcategories, thus providing more detailed information on why and how expatriate–HCN interactions are context specific. Third, it considers how the parent company’s HRM practices influence Chinese expatriates’ differentiated interactions with HCNs. Interestingly, we discover that organizational HRM practices can inadvertently play a detrimental role. Despite the intention to foster interactions, certain HRM practices may undermine expatriates’ inclinations to engage, thereby diminishing the frequency of their interactions with HCNs.

2. Literature review

2.1. The dynamic nature of expatriate adjustment

Expatriates are generally senior managers or professionals hired by an MNE’s headquarters in their home country and assigned to perform tasks in overseas subsidiaries for a specified period of time (He et al., 2019; Vlačić, Caputo, Marzi, & Dabić, 2019). Black and colleagues had conceptualized adjustment as the degree of perceived psychological comfort with the new environment or specific facets of one’s life abroad (Black & Stephens, 1989; Black, Mendenhall, & Oddou, 1991)—that is, exclusively in terms of subjective well-being. Black et al. (1991) developed their “comprehensive model of international adjustment, however, they left the nature of the adjustment largely unexplored other than establishing adjustment as having three facets—that is, general, work, and interaction adjustment. Black et al.’s (1991) seminal paper and subsequent studies have certainly advanced our knowledge. However, only replicating studies which incorporate factors that are statistically derived rather than theoretically grounded limits the development of this research area (Hippler, 2000; Stahl & Caligiuri, 2005; Thomas & Lazarova, 2006).

Haslberger, Brewster, and Hippler (2013) positioned expatriate adjustment within the wider psychological literature, extended the concept of adjustment beyond the “degree of perceived psychological comfort”, and focused on the structure of adjustment. Adjustment is viewed as a three-dimensional person–environment (P–E) relationship involving cognition, emotions, and behaviors. Each dimension is assessed against standards of adequacy, which are partly set by the external environment and partly set internally by the expatriates. The P–E relationship indicates that adjustment involves balancing external (demands) and internal (needs), with the environment dictating the external standards, as highlighted by Takeuchi (2010), and the expatriate setting the internal standards (for more details, see Haslberger et al., 2013). By integrating these elements, one can develop a more comprehensive and realistic understanding of expatriate adjustment. P–E relationship model offers a valid and insightful approach for understanding the interaction between individual and environment. Expatriates engage in complex interactions with various facets of their environments both within and beyond organizational boundaries. Thus, this study employs Haslberger et al.’s (2013) ideas to explore expatriate experiences during interactions with HCNs. A clearer elucidation of the internal and external dimensions of expatriate adjustment is crucial to assist expatriates in navigating their experiences and identifying effective strategies for enhancing their adjustment. By investigating the interactions of Chinese expatriates with local colleagues and customers in both professional and social contexts, this study can offer valuable empirical evidence in this context.

The nature of the P–E relationship is inherently dynamic and

interactional (Haslberger et al., 2013). Expatriates may be more inclined to meet external standards (such as environmental demands) in certain domains (e.g., workplace activities) compared to others (e.g., beliefs and norms), where strongly held values might prompt a deliberate choice not to adjust. Any one-dimensional perspective on adjustment inevitably overlooks nuanced aspects. Expatriates are not merely adjusted or unadjusted to their new environment. Instead, expatriates vary in their understanding, emotional responses, and interactions within different situations. The constituent elements of any P-E interaction include the individual, the environment, and the specific situation in which the interaction takes place, necessitating adaptive behavior. Additionally, acculturation research calls on scholars to pay attention to the dynamic process of expatriate adjustment. Expatriates' acculturation strategies can be assessed through their sense of belonging to both their home and host countries (Berry, 1980). These strategies are based on the intersection of two basic issues that all acculturating individuals must address (Berry, 1980): maintaining their group's culture and identifying with their home country; and engaging in daily interactions with HCNs (Berry & Hou, 2016). The generally positive or negative orientations towards these issues intersect to define four ways of acculturating: "assimilation," whereby expatriates have an exclusive link with the foreign culture. "Integration" involves a strong link with both groups and maintaining a balance between the two cultures through dual engagement. "Marginalization" occurs if expatriates link with neither group. "Separation" occurs if expatriates have an exclusive link with their home group (Berry & Hou, 2016).

While Berry (1980) clearly describes the state of each strategy, how individuals arrive at these states or whether they always have a single choice in a given situation, or whether they change over time or by situation remains unclear (Ward, 2008). Sam and Berry (2010) argue that the four strategies are dynamic and not necessarily final outcomes, as they can vary with situational factors. They suggest that alternative strategies, such as resistance, and the creation of innovative cohabitation methods, are available to counteract homogenizing effects and adapt to change. These outcomes necessitate further investigation. Haslberger et al. (2013) also emphasize the need for research to encompass the cognitive, affective, and behavioral components of adjustment to more accurately capture the expatriate experience. A deeper understanding of these internal and external dimensions is crucial for expatriates to better manage their experiences. In response to these research gaps, this study examines the interactions between Chinese expatriates (internal) and HCNs (external) across various contexts to elucidate the nuanced dynamics of their interactions.

2.2. Expatriate–HCN interactions

For many MNEs, appointing expatriate managers is an effective way to integrate foreign subsidiaries into their operational networks, implement global strategies, and compete in the global marketplace (He et al., 2019; Guo et al., 2018). Thus, expatriates must cope with workplace differences brought by cross-cultural interactions (Horak & Paik, 2023; Wang, Vu, Freeman, & Donohue, 2022), and face challenges arising from social, economic, cultural, and institutional environments that are different from their home countries (Ren, Shaffer, Harrison, Fu, & Fodchuk, 2014). Expatriates frequently encounter challenges in host countries due to their unfamiliarity with local business customs and norms, as well as a lack of robust networks within the host country's business community (Fang, Samnani, Novicevic, & Bing, 2013; Wang et al., 2022). These factors can lead to inefficiencies and difficulties in their operations (Caligiuri & Bonache, 2015).

Given the substantial costs associated with expatriation, the success of expatriate assignments is crucial for organizations (Fu, Hsu, Shaffer, & Ren, 2017). Consequently, numerous studies have investigated the determinants of expatriate adjustment (Bhaskar-Shrinivas et al., 2005; Han, Sears, Darr, & Wang, 2022). Effective cross-cultural interaction is impeded by communication barriers that extend beyond linguistic

differences (Li, Zhao, & Han, 2020). Positive interactions with HCNs are essential for expatriate adjustment, with some researchers considering them to be pivotal in the adjustment process (Kubovcikova & van Bakel, 2022; Silbiger, Barnes, Berger, & Renwick, 2021). HCNs can act as socializing agents and provide assistance, social support, and friendships to expatriates in foreign subsidiaries (Kang & Shen, 2018; Toh et al., 2012). HCNs can play an important liaison role by acting as effective conduits of knowledge between expatriates, and various parties within and across foreign subsidiary boundaries in host countries (Vance et al., 2009; Vance et al., 2014). HCNs also play a pivotal role within MNEs' foreign subsidiaries in competing in and responding to local markets (Harzing, 2001), and improving subsidiary performance (Law et al., 2009). Indeed, expatriates learn the norms and rules of their roles primarily through interactions with local coworkers, supervisors, and customers (Farh, Bartol, Shapiro, & Shin, 2010; Liu, 2021; Song, Varma, & Zhang, 2021). Thus, fostering relationships with HCNs is helpful for expatriates to integrate into new environments (Mendenhall & Oddou, 1985; Wang, Feng, Freeman, Fan, & Zhu, 2014) and host units (Varma, Pichler, Budhwar, & Kupferer, 2012).

HCNs clearly play a crucial role in expatriate adjustment. Indeed, scholars are increasingly interested in identifying the factors that influence the relationship between expatriates and HCNs (e.g., Arman & Aycan, 2013; Toh & DeNisi, 2007; Toh & Srinivas, 2012; Van Bakel, 2019; Varma et al., 2011). Nevertheless, understanding how expatriates interact with different HCN subcategories remains under-explored (Michailova et al., 2023; Takeuchi, 2010; Van Bakel, 2019). With some exceptions (e.g., Olsen & Martins, 2009; Farh et al., 2010; Toh et al., 2012), these studies tend to focus on how expatriates seek information or advice from HCN coworkers, and the association of these behaviors with expatriate adjustment. It is important to recognize that expatriates may have a broader network of interactions that extends beyond interactions HCN coworkers. This network includes regular engagement with HCN customers, for example. Research by Bruning et al. (2012) has emphasized the significance of building relationships with business partners and has highlighted that different types of social ties can lead to different adjustment outcomes. Their distinction between ties with friends and colleagues provides new perspectives. However, there has been a tendency in studies to overlook the diversity within the HCN group.

Michailova et al. (2023) reviewed research on HCNs in MNEs over five decades, and emphasized the need for future research to seriously address HCN differences and their implications for expatriates. However, relatively little research has examined how expatriates interact with the different HCN subcategories. Notably, due to the different roles that local customers and employees play in the assignment, expatriates will clearly have different expectations and requirements from them, and may adopt different strategies when they come into contact with different HCNs. Moreover, although research suggests that interactions with HCNs are critical to expatriate adjustment, little is known about the dynamic interaction process. Thus, the main purpose of this study is exploring how expatriates interact with different HCN subcategories from a dynamic process perspective.

2.3. Expatriate adjustment in Chinese MNEs

Expatriate management research primarily focuses on MNEs from developed countries, exploring the challenges faced by their expatriate workforce and global staffing policies (Ado et al., 2021; Gonzalez-Loureiro et al., 2015; Hack-Polay & Mahmoud, 2021; Harvey, Speier, & Novecevic, 2001). The term "expatriate" often implies a racial bias, typically associated with "whiteness", which is perceived as invisible compared to other racial groups (e.g., Hof, 2021; Richardson, 2022). The literature on expatriate adjustment has a significant limitation in the generalizability, particularly when findings from Western expatriates are applied to culturally diverse populations (Kim & Slocum, 2008; Liu, Sekiguchi, Qin, & Shen, 2024). Research on Chinese

expatriates is notably scarce compared to the extensive work on White expatriates (Gao, Liu, & Zou, 2013), despite the importance of understanding cultural differences in social capital utilization across Eastern and Western contexts (Bruning et al., 2012; He et al., 2019). Hofstede (2007) underscores the complexity of culturally specific management frameworks, suggesting that Western-centric literature may not be entirely applicable to Chinese expatriates. The unique cultural concept of *guanxi* further distinguishes Chinese social and professional interactions from those of other cultures (Nadeem & Muntaz, 2018; Chuang et al., 2015), underscoring the imperative for effective HRM to comprehend the cultural context.

Social affect and cognition are more intertwined in Chinese than in American professional relationships (Chua, Morris, & Ingram, 2009). Chinese culture prioritizes harmonious interpersonal connections, as opposed to the Western focus on individualism and personal gain (Chuang et al., 2015). This is largely due to the influence of Confucianism, which promotes collective values and harmonious relationships (Hofstede, 2001). Collectivist societies, such as China, rely on long-term, in-depth relationships where subtle cues are crucial for communication (Thomas, Au, & Ravlin, 2003). In contrast, Western individualism is characterized by low-context communication and personal interests (Fang & Faure, 2011). Research by Gao and colleagues (1996; 1998; Triandis, 1994) has identified five key characteristics of Chinese communication: implicitness (*hanxu*), listening-centeredness (*tinghua*), politeness (*keqi*), insider communication (*zijiren*), and face-consciousness (*mianzi*). These characteristics are well-documented in the Chinese business and management literature (Blackman, 1996; Fang, 2006; Faure, 1999; McGregor, 2005). The profound differences between Chinese and Western cultures highlight the significance of exploring the adjustment of expatriates within CMNEs.

Previous research on Chinese expatriates, while valuable, has primarily focused on specific groups, such as those from Hong Kong working in the People's Republic of China (Selmer & Shiu, 1999; Selmer, Ebrahimi, & Li, 2000a; Selmer, Ebrahimi, & Li, 2000b), or on "overseas Chinese" more broadly (Selmer, 2002). However, these studies often overlook the diversity among Chinese expatriates. Despite a shared ethnic origin, mainland Chinese expatriates differ from overseas Chinese due to their unique backgrounds, which can affect their adjustment, as seen in the challenges posed by cultural and ethnic ties (Richardson & Ng, 2021). There remains a significant research gap concerning mainland CMNEs' expatriates (Zhu, De Cieri, Fan, & Zhang, 2014; He et al., 2019; Liu et al., 2024), which this study aims to address.

In addition, HRM practices can significantly affect expatriate–HCN interactions. According to Mahajan and Toh (2014), organizational environments play a crucial role in shaping the dynamics of cross-cultural communication and collaboration within MNEs. Understanding these contextual factors is crucial for organizations to develop effective HRM practices that enhance expatriate programs. Expatriates encounter numerous challenges in unfamiliar cultural settings (He et al., 2019), and require substantial support during their adjustment (Farh et al., 2010). Organizational support can mitigate job uncertainty and psychological stress (Hippler, Caligiuri, & Johnson, 2014) and foster trust in the workplace (Hutchings, French, & Hatcher, 2008). Without such support, expatriates may struggle to feel connected to the organization and assimilate into foreign subsidiaries (Zhang, Li, Zhou, & Zou, 2018). CMNEs have been shown to offer vital social and organizational support to their expatriates (He et al., 2019; Huang et al., 2022). Research on the HRM of CMNEs is emerging, with studies indicating that expatriate influence on subsidiary performance is mediated by subsidiary autonomy (Tao, Liu, Gao, & Xia, 2018). Huang et al. (2022) found that the organizational support provided in a simulated home effectively aids Chinese expatriates in adjusting to work and social interactions. Liu et al. (2024) introduced a theoretical framework to explore the complex dynamics between expatriates and host-country employees, examining the double-edged effects of expatriates' boundary-spanning roles with data from 177 expatriate–host-country coworker dyads in CMNEs.

Building on this, this study investigates how organizational HRM practices affect the varied interactions of Chinese expatriates with host-country nationals.

In summary, this literature review integrates two theoretical areas—expatriate adjustment and expatriate–HCN interactions—into one coherent framework. Based on this, the following general questions guide this study:

RQ1: How do mainland Chinese expatriates interact with different HCN subcategories to adapt to working overseas?

Here, we explore how they interact with local coworkers and customers to adapt to the foreign workplace.

RQ2: How do the organizational HRM practices influence their interactions with HCNs?

Here, through a detailed description, we examine the role of organizational HRM tactics in shaping expatriates' differentiated interactions with different HCNs subcategories.

3. Methodology

In management domains with a strong cross-cultural emphasis, a qualitative design is considered the most appropriate, as it allows the researcher to gain "an understanding both of what individuals experience and how they interpret their experience" (Bluhm, Harman, Lee, & Mitchell, 2011, p. 1870). We apply the narrative case study method to develop a nuanced and in-depth understanding of how Chinese expatriates interact with HCNs, and how organizational HRM practices affect this process. Case studies typically provide valuable insights into complex phenomena and contribute to our theoretical understanding (Gioia, Corley, & Hamilton, 2013). Unique cases particularly offer opportunities for greater insights into social phenomena (Graebner, 2007). They provide a nuanced, contextually tailored comprehension of intricate phenomena, which can help enhance theoretical understanding and guide practical decision-making processes. Consequently, we choose distinctive and illuminating instances of expatriate management to have more insightful research findings. Initially, several prospective companies were identified for our selection pool. Following a meticulous assessment, we ultimately chose Company A for the reasons elaborated in the subsequent sections.

3.1. Research context

Company A has an extensive business encompassing communication equipment, intelligent terminals, cloud computing, and the Internet-of-Things, among other domains. The company not only prioritizes technological innovation and R&D but also ventures into pioneering business models while continuously exploring novel operational methods. Committed to open collaboration globally, Company A collaborates with partners worldwide to build a smarter, interconnected world. To fulfill this vision, Company A has established branches and subsidiaries across Europe, the Middle East, Africa, Asia Pacific, Latin America, and other regions, thus creating a global footprint that bolsters its international presence while enabling proximity and catering to diverse regional user needs. It is committed to expanding its international market through talent output and provides a particularly information-rich context for the specific purpose of this study.

We select expatriates from Company A as the research subjects for several reasons. First, it has an extensive organizational coverage and numerous expatriates. By the end of 2021, its nearly 20,000 Chinese employees were stationed worldwide. Second, Company A has rich experience in cross-cultural management. Exploring this unique case has both practical and theoretical significance as it can provide a deep understanding of Chinese expatriate groups and offer insights for other enterprises. Finally, Company A can provide a wealth of information sufficient to fully understand the topic. Our exploratory study revealed that the adjustment of Company A's expatriates is closely related to their interactions with HCNs and that organizational HRM practices

significantly affect this process. These factors provide us with insights into our research questions.

3.2. Data collection

Chinese expatriates from Company A were contacted through the first author's professional and personal relationships, and contacts were expanded using the snowball technique. A total of 50 potential interviewees were contacted, but some declined to participate due to lack of time. The number of interviews was determined by information redundancy and saturation, in line with the principles of naturalistic inquiry (Lincoln & Guba, 1985). A total of 33 respondents (details of the sample are presented in Table 1) participated, covering a range of management levels, including senior, middle, and lower-level managers. On average, the respondents were young (average age = 32 years), with nearly 76 % having worked abroad for more than one year. The assignment locations mainly covered Europe, the Americas, Africa, and Asia. Company A has a high ratio of male to female employees; moreover, influenced by the family-oriented mentality of Chinese women, the number of female employees sent abroad is relatively small (only 21 %). The interviewees consented to having their interviews recorded, transcribed, and extracted anonymously for this study.

We discussed and determined the specific interview times, locations, and formats with the respondents. Considering the long distance and high cost of overseas research, we used WeChat video interviews besides face-to-face interviews. Interviews ranged from 40 to 150 min depending on the interviewees' schedules and their informativeness. We introduced the research topic to the respondents or sent them an interview outline (see Appendix I) in advance to ensure that they understood the research and were well prepared for it. Semi-structured interviews were conducted to explore the topic using open-ended questions. The interviews were organized around these issues, and follow-up questions were asked if any new concepts or themes emerged. All authors received

rigorous training in interview techniques to ensure their effectiveness. All interviews were conducted in Chinese. We recorded the interviews after obtaining permission from the interviewees. Subsequently, all interviews were transcribed verbatim. Throughout the coding of the transcribed texts and secondary data, the first author also wrote research memos. Interviews and related data collection were stopped when no new concepts or opinions emerged.

3.3. Data analysis

Data analysis involved three-level coding, that is, open, axial, and selective coding (Strauss, & Corbin, 1998) —followed by Gioia's first- and second-order coding processes (Gioia et al., 2013). This approach was deemed appropriate because of its systematic coding process, which facilitated the inductive analysis of large amounts of data. Open coding involves breaking down the data, assigning concepts, and categorizing them through continuous comparison to reveal and organize the ideas and meanings contained within the data. Next, axial coding aims to identify, explore, and establish connections among categories. Finally, selective coding aims to extract the core category, systematically link it with other categories, depict the overall behavioral phenomenon in a "story line" format, and concretize their relationship (Strauss, & Corbin, 1998).

The first author began first-order coding by reviewing interview transcripts and archival data, and identifying "thought units," which are words, lines, or passages, representing a fundamental idea or concept (Patvardhan, Gioia, & Hamilton, 2015). They selected, categorized, and labeled direct statements (i.e., first-order, informant-centric codes) that other authors could assemble into more theoretical perceptions (second-order, researcher-centric themes), which all authors could later condense into more general theoretical concepts (aggregate dimensions). The first author read each interview transcript several times and coded it "sentence by sentence" and "paragraph by paragraph." A

Table 1
Demographics of the participants.

Anonymous code	Age	Position	Dispatch location	Dispatch time	Interview time(mins)
M1	32	Supply chain specialist	Brazil	4.5 years	120
M2	27	Operation manager	Egypt	2 years	120
M3	29	Sales manager	Iran	8 months	66
M4	30	Sales manager	Angola	2 years	73
M5	31	Operation manager	Indonesia	2 years	40
M6	33	Supply chain specialist	South Africa	9 months	90
F1	28	Operation manager	Algeria, Tunisia	1.5 years	60
M7	36	Training manager	Mexico	3.5 years	104
F2	35	HR Supervisor	Austria	1 year	87
M8	33	Sales executive	Austria	2 years	40
M9	35	Operation quality	Denmark	3 years	40
M10	40	Sales director	Commonwealth of Independent States	7 years	100
M11	34	Finance supervisor	Austria	3 years	58
M12	34	Product manager	Philippines	4 years	40
M13	37	Supply chain specialist	Iraq	4 years	132
F3	34	Finance supervisor	Germany	4 years	
M14	27	Operation manager	Cameroon	6 months	60
M15	26	Technical services	Malaysia	1 year	73
F4	30	HR supervisor	Nigeria	2 years	45
M16	34	HR director	Ghana, Nigeria	5 years	43
M17	31	Service supervisor	Mexico, Nigeria	3 years	80
M18	36	International marketing	Nigeria, America	8 years	56
F5	33	Finance director	Uzbekistan, Turkey	8 years	63
M19	35	Customer manager	Germany, Turkey	8 years	
M20	32	Customer manager	Ghana	3.5 years	
M21	32	Product manager	Sri Lanka, Thailand	7 years	64
M22	30	Technical services	New Zealand	6 months	120
F6	25	Business manager	South Africa	7 months	40
M23	40	Finance director	Columbia	6 months	150
M24	35	Patent Engineer	America	3 years	38
M25	32	Product manager	Thailand	6 months	40
M26	26	Technical services	Malaysia	6 months	73
M27	30	Business manager	Kenya	2 years	150

code representing a theme or concept was assigned to any content that reflected the same meaning. Codes with common or similar elements were merged to form major categories. This process involved decomposing and reorganizing all collected data to classify and visualize the ideas and meanings contained in the data through constant comparison.

The second-order analyses involved axial coding, which comprised synthesizing and clustering of first-order codes into higher-order themes. Axial coding aims to logically establish linkages among categories that emerged from the open-coding process. A hierarchical framework (Table 2) was developed by linking different categories to aggregated dimensions. Finally, selective coding was performed. Consequently, propositions or statements which interrelate the categories were generated, and the database was reviewed to further

understand the meaning and provide explanations (Creswell, 2007, p. 161).

All authors contributed to finalizing the themes, thereby minimizing the potential bias from a particular researcher's interpretations, background knowledge, and beliefs (Whittemore, Chase, & Mandle, 2001). When concepts or categories with incomplete connotations, unclear logic, or conflicts appeared during the data analysis, all three authors jointly tested them through repeated comparisons, continuous trade-offs, or data recall. All authors checked the consistency of the coding results with the original data to ensure accuracy.

Table 2

The hierarchical framework of coding.

Aggregated dimensions	Second-order codes	First-order codes	Selected empirical evidence
Differentiated social interaction	Relationship building with local colleagues shows a “need orientation”	Interact frequently and change management style at work	There is a lot of working contact with local employees, constantly explore in the practice of expatriate management, and improve professionalism through constant communication with local employees, so as to make the management of local employees more effective. Learn how to communicate with local colleagues, eliminate ambiguity and adopt SMART principles.
		Communicating only when there is a need in private	The communication with the local private is superficial. Overlap only at work, less contact outside work. Communicate only when necessary.
		Seeking information	Seldom take the initiative to establish a good friend relationship with the local people, and only integrate into the local people when necessary. Ask locals for information when they get confused.
		Asking for language help	Communicate with local employees to learn more about the local culture. Consult local people for related information. Learn about the local culture by interacting with local employees. Ask a local colleague for language help is common.
	Relationship building with local customers shows a “utilitarian orientation”	Contacting with local customers frequently	Seek language support from local colleagues in daily life. Managers interact with local clients frequently. Regular contact with local customers is common. More contact with local customers.
		Interacting with local customers with purpose	Managers communicate with local customers with a purpose. Managers specialize in maintaining relationships with local customers. Local clients are willing to contact Chinese expatriates. Communicating with customers is a task and must be touched. Make a conscious effort to “connect” with customers.
Supportive organizational tactics	The organization promotes active integration	Dealing with local customers in flexible ways	Account managers specialize in maintaining customer relationships. Avoid sensitive topics such as religion and politics when interacting with local customers, and talk about topics gradually broader with familiarity. Overseas customer relationship management is different from that in China and needs to be adjusted. The Chinese side is very flexible and changes its strategy in time to cope with different customer relationship management.
		Creating an environment conducive to interaction	Organize team building activities from time to time to promote exchanges and cohesion between the Chinese and local sides. Each department has some money for you internally as a team building.
Outcomes of interacting	Western standard with Chinese philosophy	Bridging expatriates and local staff in post setting	All people's working language must be English, and promote the Chinese side to communicate with local employees. Because it is a Spanish-speaking area, the customer's English ability is limited, so it is necessary to bring local staff to visit the customer. In general, many of our departments are Chinese + local collocation, the Chinese side speaks English, and the local communication with customers speaks Spanish.
		Catering to the local way of operation	In foreign countries, companies must study local laws and management models and strive to conform to local norms. In the specific communication between people, superiors and subordinates, or project operation, there will certainly be a deep shadow of Chinese culture.
	Differentiated management	Following the home organization's business philosophy	
		Local employees follow local management style	Chinese employees are used to obeying authority, so the management style is more simple and rough, and direct discussion and implementation can be done. However, local employees in Europe pay more attention to personal thinking, so management must be more convincing and convince local employees in a suitable way before implementation. Due to the protection of human rights under the host country's laws, local employees are not allowed to publicly criticize them, at most, they are only gently reminded in emails.
		Chinese expatriates follow domestic management style	The Chinese staff still follow the way of the headquarters.

3.4. Credibility and trustworthiness

Although the respondents were offered the opportunity to review the interview transcripts, none chose to this option due to the time-consuming nature of the task. Despite the potential benefits of member checking, we maintain that our study was not compromised by the absence of interviewee transcript reviews. As Thomas (2017, p. 37) notes, there is “no evidence that routine member checks enhance the credibility or trustworthiness of qualitative research.”

To ensure our study’s credibility and trustworthiness, we adhered to the criteria outlined by Creswell and Miller (2000) for qualitative studies: triangulation and peer review. In addition to the interviews, we collected data from various sources, including internal online forum articles, publications, and related books from the case company. These textual materials were manually organized, read, and coded to facilitate triangulation. To verify the reliability and validity of the data, we cross-checked the interview transcriptions for meaning and accuracy by asking participants to confirm the key segments of their interview quotations (Ado et al., 2021). Discrepancies in coding opinions were resolved through discussions with the other research team members until consensus was reached. To confirm our findings, after the initial establishment of the model, some interviewees were invited to comment on whether the final story was in line with their situation. Moreover, presenting multiple direct quotes from our interviews, as we have done here, also enhances not only credibility but also “allows others to assess how transferable the findings are” (Krefting, 1991, p. 220).

3.5. Ethical considerations

This study strictly adhered to the ethical principles guiding qualitative research, ensuring that each respondent’s rights and dignity were respected throughout the entire process. Before initiating the interviews, we provided each participant with a detailed description of the study, and outlined its objectives, methods, and expected outcomes. We emphasized that participation was entirely voluntary, and that no individual would be coerced or pressured to participate. To further safeguard the respondents’ rights, we informed them that they had the option to interrupt or withdraw from the study at any time without any adverse consequences. All identifying information was removed from the transcripts and replaced with pseudonyms to protect the confidentiality of the participants.

4. Findings

We present our analyzed interview data under three findings: differentiated interactions between Chinese expatriates and HCNs in the host country; organizational HRM practices and their role in the interaction process; and outcome of their interplay.

4.1. Differentiated interactions between Chinese expatriates and HCNs

The majority of respondents chose to establish relationships with HCNs to facilitate their integration into their overseas workplaces and adopted diverse strategies, as detailed below.

Need-oriented interaction with local colleagues. Most respondents in Company A frequently interacted with their local colleagues because of their shared goals and the need for cooperation. Much of their local knowledge came from contact and communication with local colleagues. However, outside work-related needs, their interactions were limited. Thus, most respondents exhibited a clear “need-orientation” while establishing relationships with their local colleagues and only reached out to them when they had specific needs. On the one hand, language and cultural differences with local colleagues created an “us versus them” mentality, resulting in interactions that were primarily task-oriented and limited to work-related matters. On the other hand, the majority of local employees tended to marry young, leading to a

distinct demarcation between their family and work lives. Consequently, interactions beyond the workplace were limited. Additionally, the temporary nature of Chinese expatriates’ residence in these regions discouraged them from actively integrating into the local social fabric. The following opinions expressed by respondents further supported these observations.

M12: “In the Philippines, I primarily engage with local colleagues within the confines of my professional responsibilities, with limited interaction outside of work.”

M2: “Our company has more local employees than Chinese expatriates. We usually work with them, and we get along well with local colleagues. But we don’t have a lot of contact on weekends or outside of work, and we only date occasionally in private. When I interact with local colleagues outside of work, I only communicate with them when I need to, rather than actively as a long-term social relationship.”

M14: “Due to my demanding schedule, I have limited contact with individuals outside of the local workforce and consequently lack the time to fully engage with them. It is evident that there are minimal opportunities for immersion into the local life, and typically, we have little desire for integration.”

Working abroad presents a unique challenge. Nearly 90 % of the respondents indicated that their overseas assignments are highly demanding, often necessitating extended working hours, thereby limiting their personal time. Furthermore, engaging with local employees outside the workplace can be challenging. M17, currently stationed in Mexico, commented, “*Working overseas is significantly more taxing than domestic work. I regularly work until 11 p.m. every day, with my schedule filled with numerous phone calls and meetings from morning to night.*” This sentiment was echoed by the majority of respondents. Additionally, frequent interactions with local colleagues in the workplace require Chinese expatriates to constantly adapt their working styles and strive for a more professional approach in their management techniques to better integrate them into local working practices.

With numerous overseas subsidiaries, Company A maintains a high entry threshold for local hires. These employees typically possess advanced educational backgrounds and primarily communicate in English. Linguistically, Chinese is considered a high-context culture, while English falls into the low-context category. High-context communication involves rich and simple words that convey implicit meanings and often relies on non-verbal cues. Conversely, low-context communication emphasizes both clarity and specificity. Chinese individuals often communicate indirectly and tactfully, leaving room for further interpretation. However, when Chinese expatriates interact with local employees, cultural differences can lead to misunderstandings owing to the ambiguous or tacit understanding among Chinese individuals. Many respondents echoed these concerns.

M18: “When it comes to Chinese employees, they are familiar with all aspects, so mutual understanding is rather easy, and there is no need to say anything specifically about the implementation of company policies. But local employees need more guidance, or show very specific tasks to them.”

M10: “Chinese employees know each other, they know what the job means, how urgent it is, and even how important it is, based on your tone of voice. But foreigners are different. You have to tell them clearly.”

M2: “If you’re talking to local employees, you have to be direct. They would not read between the lines, and if you talk to them in a roundabout way, it will be impossible to communicate.”

M11: “The difference between local employees and us is that they have a clear boundary between work and life, have a stronger plan

for work, and are more inclined to do things according to the procedure and by the rules.”

According to M11, the local employees’ work style places greater demand on Chinese expatriate managers in Company A. Unlike their casual, extensive, and flexible approach in China, they must adopt a more structured and planned methodology abroad. Consequently, Chinese expatriates proactively endeavor to comprehend the local work culture and accordingly adjust their conduct, aiming to promote business progress. The majority of Chinese expatriates share a consensus that domestic management tends to be informal and adaptable, whereas overseas operations require strict adherence to local work schedules and systems. Therefore, Chinese expatriate managers need to elevate their professional standards, particularly in terms of the clarity in the work objectives and requirements. The following quotes offer deeper insights into this.

M21: “In managing local staff, I believe that work arrangements should be clearly defined without excessive interference. Unlike in China where leaders may request immediate assistance at any time—potentially disrupting one’s own workflow—such practices are not conducive to professionalism. Since our company recruits college graduates among its local workforce, it is essential to establish clear work goals and requirements from the outset.”

M10: “The fact that local staff predominantly speak English indicates their receptiveness towards Western culture and professionalism, which means that, effective communication necessitates certain skills on our part. For instance, when delegating tasks to these employees, specificity regarding goals and processes is crucial. So that the local staff will feel that you are professional, willing to communicate with you, and he will be very invested in doing things. So we have to understand the local working habits and professionalize ourselves a bit. This is important!”

The diversified overseas workplace and corresponding higher management requirements required Chinese expatriate managers to improve their professionalism and adopt a more fine-grained approach. The English-language working environment, and different working norms and methods required more specific and professional management. Vague management methods which worked for Chinese employees were ineffective for local employees, who instead required clear assignments, measurement standards, and planning. Chinese expatriates were advised to follow the “SMART principle” (namely, *Specific, Measurable, Actionable, Relevant, Time-based*) in their management based on local employee characteristics. Additionally, Chinese expatriates worked hard to learn the local management mode, laws, and work norms, and respected local employees’ working habits. This required continuous improvement in professional abilities, and the willingness to change and learn in practice. Finally, communication with local employees needed to be outspoken and clear to overcome work obstacles. In this new culture, job adjustments required Chinese expatriates to spend more time and energy to actively interact with local employees.

Meanwhile, the situation was different outside work. In general, Chinese expatriates had limited contact and superficial communication with local colleagues during their leisure time. Their social interactions were primarily restricted to seeking information and language consulting, with little effort expended towards establishing long-term or deeper social relationships. Private interactions with local colleagues were infrequent, with most respondents preferring to associate with fellow expatriates. As M8 described, this preference can be attributed to cultural and ideological differences, which resulted in different leisure activities and hobbies.

Private interactions were minimal and mostly confined to company-organized team-building activities. The frequency of contact with local colleagues outside of work is described as “occasional” by M4, who emphasized this twice. Nearly half of the respondents indicated that they primarily interacted with local colleagues to overcome language

barriers. Conversations with M2, the sales manager in Iran, and M3 and F1, the product managers in Egypt and Algeria, respectively, revealed that the private interactions between Chinese expatriates and local colleagues were primarily limited to language consulting or information seeking. These interactions were driven by necessity rather than the desire to establish social relationships. Below are representative quotes.

M21: “It is difficult to communicate deeply with local staff, partly for language and cultural reasons. It’s hard to talk deeply about anything other than work. English is easy to use at work, but it is really difficult to talk about life topics, such as where the local food is good, which place is interesting, when the local people talk to you about these things, you have no idea what he is talking about. Or what he says about his brothers and sisters, or relatives and friends, you can’t figure out who he’s talking about.”

M8: “We communicate in English at work. None of us can speak the local language, so we rarely talk about personal matters with local employees, which is also related to language skills. For using our own language, that is, Chinese, we can talk about more personal matters, such as society, weather, customs, sports and hobbies. But you might not talk about that too much with local employees.”

M5: “In general, if you want to communicate with local employees deeply and freely, just like Chinese employees, I think it is still relatively difficult. Since you don’t have a deep understanding of other people’s history, geography, culture, politics, etc., you may not be able to communicate with others so deeply.”

In summary, the majority of Chinese expatriates engage in frequent communication with their local colleagues during work hours, and are willing to adapt to local working practices and communication styles. However, communication outside the workplace tends to be limited. Due to individual and cultural disparities, most respondents maintain a relatively superficial level of private communication and contact, and are reluctant to work on comprehending and integrating into the local culture and social fabric. Consequently, their interaction with local colleagues manifests as a blend of active accommodation of work-related activities (assimilation) and tendency to maintain a separate existence in private (separation), reflecting a strong orientation towards fulfilling specific needs.

Utilitarian-oriented interaction with local customers. Expatriates play a pivotal role in the successful execution of MNEs’ international operations. They are sent abroad to aid their companies in market expansion, which requires fostering close relationships with customers. Indeed, Company A’s culture emphasizes the importance of customers. The parent organization assigned many Chinese employees abroad to establish relationships with local customers as quickly as possible. Many respondents reported frequently interacting with local customers with the explicit goal of building strong connections. One of Company A’s core cultural values is being “customer-centered.” In numerous speeches, its founder has emphasized the importance of customers. The Company A’s employees are asked for remaining “infinitely close to customers” and orienting themselves towards customers rather than toward their supervisors. The company places high value on building and maintaining customer relationships. Whether their objective is to develop new markets or maintain strong connections with existing customers, the respondents’ jobs require that they spare no effort to implement these core values through their actions. They are more engaged with local customers than with their local colleagues and more inclined to cultivate long-term friendships rather than purely professional relationships. M18, who had years of international marketing experience, contrasted the differences in interactions with local customers and colleagues.

“There are many interactions with the local customers, we need to interact with the customers. I have a good relationship with customers. I often go to customers’ homes and participate in their

private affairs. However, there is less interactions with local employees in private, it is relatively rare, for meals or sometimes for company events.”

In the process of maintaining relationships with local customers, most respondents primarily catered to customer preferences, adjusted their behaviors, and made efforts to meet customers’ needs. M17, who worked in Mexico as a service solutions specialist for many years, discussed how to build relationships with foreign customers. He emphasized the differences between China and overseas countries, particularly the flexibility of Chinese expatriates in adjusting their customer relationship management strategies after interacting with and learning from locals.

“In terms of maintaining customer relationship, the wine and gift culture are obvious in China. But in foreign countries, the wine culture is actually not that obvious. The local customer relationship may be more about mutual trust. For example, I have done business with you, from which both of us have made profits. So, I would like to cooperate with you again next time. It is not how many drinks do two people have to close the deal. But people can change. The leader who has been doing customer relations in China for many years is actually very flexible, and once he finds that the approach [used to effective in China, however it] doesn’t work [abroad], he will change his strategy very quickly. But in fact, he will still keep the Chinese thinking shadow.”

Certain respondents indicate that overseas customer relationship management is not significantly distinct from domestic customer relationship management, emphasizing the importance of “striking a chord with one’s preferences.” An accomplished Chinese expatriate, M24, concisely notes, “Both international and domestic markets share a fundamental principle: resonating with [the] target audiences. However, individuals vary, their preferences differ, and market experience is crucial in gauging the right approach.” The fundamental divergence lies in cultural differences. Given the diverse assignment locations of Chinese expatriates, coupled with substantial cultural disparities across regions, communication between Chinese expatriates and local customers may vary, necessitating careful discernment. M4, an overseas sales manager, has extensive interactions with local customers, and briefly outlines the distinctions among customers in Africa, Europe, and the United States. M19, assigned to work in three different countries, concurred.

M4: “Many clients in Africa are willing to accept ‘small bribes’, and some of them who are less senior will ask for things, such as mobile phones. While Europe and the United States have legal restrictions on these, they are more professional, eating and drinking with us can be normal, but expensive gifts cannot be sent [to them]. We can accompany clients to watch football games, go to the bar, which is common.”

M19: “German and British clients demonstrate a high level of professionalism in their work...It is my personal observation that Europeans take great pride in their cultural and economic advancements...Engaging with high-end European customers can be more challenging due to their preference for professional interactions such as workshops, meetings, and technical exchanges. In contrast, the Turkish business culture resembles that of China’s where socializing over drinks or engaging in personal activities precedes discussions about business matters.”

The primary revenue stream for the case company is from the overseas market, necessitating a robust approach for cultivating and maintaining a local clientele. However, challenges arise in engaging with these local customers, particularly regarding sensitive religious matters. M21 shared personal experiences with clients, noting that while discussions naturally deepen as familiarity grows, sensitive topics, particularly religion, are avoided whenever possible. They adopt a respectful approach towards the customers’ beliefs in all interactions

with them. In fact, some respondents reported embracing their clients’ religions to foster stronger bonds, even if this entailed a degree of pretension at times. Notably, with religions such as Islam, language barriers can pose significant challenges in establishing meaningful contact with customers. Still, the interviewees strived to overcome these obstacles.

M4: “In the Middle East, if our Chinese employees and customers say they like Islam, they are happy to tell you about Islam. Some employees just pretend to be Islamic and get on well with customers.”

M2: “In fact, it is more difficult to work in Africa and the Middle East, which are quite different from China’s culture, especially the religion. For instance, in North Africa, my place of work, the region is home to Islamic nations that exhibit a greater degree of xenophobia and where the language differs from our own. Arabic is the mother tongue, and English is not spoken in many parts of it. I think it’s more difficult to maintain the customer relationships in Islam, Muslim areas.

Overall, interactions with local customers are a crucial necessity for expatriates. As one respondent stated, “*there is a demand, we must interact with them.*” Therefore, expatriates’ interactions with local customers are more active and involve continuous follow-ups, observations, and meeting customer needs to establish long-term cooperative relationships. To “*meet the needs of customers and achieve their ideals,*” interactions with customers are comprehensive, in-depth, and consciously proactive. We found that most respondents exhibited a “utilitarian-orientation” when building relationships with local customers.

In summary, in this case company, the cross-cultural interactions between Chinese expatriates and local employees vary across different situations. Expatriates frequently collaborate with local colleagues on shared projects, aiming to achieve common objectives efficiently. To demonstrate professionalism, they adapt their work habits and management strategies internally. During leisure time, however, their interactions with local colleagues are limited. Cross-cultural interactions between Chinese expatriates and local employees are primarily “need-oriented”, focusing on project collaboration, information acquisition, and language consultation. The expatriates themselves determine the scope of these interactions. Internally, Chinese expatriates assess what adjustments are necessary and proceed with the appropriate adaptations. When interacting with local customers, they adopt distinct tactics, often guided by a “utilitarian-orientation” rooted in win-win cooperation and mutual benefit. They strive to maintain harmonious relationships with customers, as mandated by their headquarters, which is crucial for the successful completion of their assignments. When faced with specific demands or interests, expatriates demonstrate a proactive approach in collaborating with local business partners. This “utilitarian-orientation” is deemed to meet the requirements of the external host society, particularly those of local customers.

4.2. Organizational HRM practices and their role in the interactions process

Company A implemented several HRM practices to promote Chinese expatriates’ integration into foreign subsidiaries and achieve the expected outcomes of their assignments.

Creating an environment conducive for communication and interaction. Before being sent abroad, the case company provided cross-cultural training for Chinese expatriates, including information on overseas matters and cross-cultural communication skills, to enable them to gain a preliminary understanding of overseas work and some ability to cope with challenges. In the first three to six months of their assignments, the company assigned mentors to Chinese expatriates to provide business and personal guidance. The implementation of a “tutorial system” helped them quickly socialize in the overseas subsidiaries. As M11 stated, “*It was easier to solve problems when there was someone you could ask for help or guidance than doing it on your own.*” Regular group study sessions

are also an important means of improving employees' ability to adapt to overseas assignments and promote their socialization. *"The company has regular learning requirements, such as annual, quarterly, and monthly online learning. Our company does not rest on the last Saturday of each month but instead summarizes the whole month to help staff improve themselves,"* said M7. Overseas subsidiaries have also implemented measures to promote communication, interaction, and integration among staffs. For example, they encouraged or required Chinese expatriates to communicate in English.

M7: When I was in Thailand, the CEO asked everyone to work in English! In fact, the CEO's English is very poor! But that's what makes our executives great...This [the CEO's courage to challenge his weakness and encourage English communication] is a role model [to the assigned expatriates in Thailand] and really strengthens the communication with local staffs. Our company has launched multiple training courses to facilitate communication between Chinese and local employees, to enhance the cross-cultural awareness of managers and employees, and build a diverse team with mutual trust.

In addition, overseas subsidiaries organize team-building activities to promote staffs cohesion and create a harmonious working atmosphere. Through various activities, the company seeks to reduce the distance between Chinese expatriates and local employees so that everyone can communicate, interact, and quickly integrate into the organization. This enables them to focus on common goals and work together towards the organization's interests.

M9: The whole office is slowly integrated. When new local employees come in, we will introduce the organization to them one by one about [the] company's values, rules and regulations. Every year, each department will have some money for team building activities. And there's a birthday party every month, then at Christmas it's the custom that all employees in Denmark get involved in a Christmas party.

Although the company made significant efforts to promote communication between Chinese expatriates and local employees, the effect was not as good as expected. Most people still preferred to stay within their comfort zones, resulting in a seemingly integrated group that was actually "distinct." M7, who once worked in Mexico, shared:

"In terms of leisure activities, local employees like to dance and Chinese people like to drink! At one annual meeting, only the Mexicans danced in the middle, while the Chinese all sat around outside. The company then put in a raffle to keep people around longer. In fact, it is quite difficult to integrate Chinese and local people together because there are still too many cultural differences."

Company A has consistently developed and enhanced the working and living environments for its overseas subsidiaries, ensuring ample logistical support for Chinese expatriates. However, this also hinders Chinese expatriates from interacting with locals by weakening their desire and reducing opportunities for contact during their leisure time.

Bridging Chinese expatriates and locals in tandem assignment. Company A's foreign subsidiaries have established an "intermediary" bridging mechanism to facilitate smoother interactions between Chinese expatriates and locals. This mechanism manifests in two ways: "local bridging" and "Chinese bridging." Local bridging, wherein local employees serve as translators during meetings and visits with local customers, is common in non-English-speaking areas. Due to limited English proficiency among some local customers and a lack of proficiency in local languages among Chinese expatriates, local employees who are familiar with the business and proficient in English are often enlisted as intermediaries for translation and communication. Additionally, Company A hired Chinese employees who spoke minor languages to specialize in customer relationship management in non-English-speaking areas. F1, who worked in Algeria, provided a

detailed description about the related situations: In French-speaking areas, local employees acted as translators for communication between Chinese expatriates and local customers.

F1: The customer speaks French, and the local staff can speak English, French and Arabic. We transfer the tasks to the local staff, so that he can communicate with the customer. If the customer doesn't understand something, he will translate it for us and we will answer it. Every time we take extra care to double check. If the transmission is wrong, how many people's efforts will be wasted!

This is one example of similar situations described by several respondents. For example, M14 described the process of communicating with local customers (primarily Spanish speakers) during an assignment in Latin America. The customers spoke limited English. Hence, visits were conducted with local employees. As it was difficult for local customers to change their language habits, English and Spanish were often mixed during business communication, making the translation role of local employees very important.

M14: Another problem was that the local client's English was not very good, so it was very difficult to communicate. Usually speaking in English at the beginning, after a little while, it was off track. Finally, the local staff directly communicated with the customer in Spanish, and then asked me in English where they don't understand, and I spoke to him in English, and he replied to the customer in Spanish.

Considering the influence of language barriers, the company has adjusted its staffing arrangements by implementing tandem assignments. Typically, a Chinese principal and local deputy are assigned to the same position, ensuring the implementation of this bridging mechanism while minimizing the impact of language barriers on work processes. *"You have no problem communicating at work. However, there may be some problems when talking to clients or local staff about family matters,"* said M21. Besides the work itself, maintaining relationships with local customers requires familiar cultural backgrounds and deep, comprehensive communication. In these situations, local employees play an important role. Therefore, the "Chinese expatriate + local" staffing arrangement promotes the smooth workflow.

F4: For example, a Chinese manager with a foreign manager is good for promotion. Because Chinese expatriates still have some barriers in terms of language, culture and so on. It is better for two people to match, so it will work more smoothly.

M17: In general, many of our departments are the combination of [the] Chinese and locals. [The] Chinese speak English, and the locals speak Spanish when communicating with clients. That is ok. I heard that a lot of countries have a Chinese with a local model.

In addition, local bridging personnel can function as adept local employees, effectively serving as the "glue" within the organization. Differences in working behaviors and habits across different countries and regions are due to cultural imprinting through long-term accumulation, and cannot be fully learned and integrated into overseas operations in a short period. Therefore, local employees with high business skills and rich experience are selected to manage or influence other locals. This approach reduces the costs and yields superior results. M16, a senior human resource manager in West Africa, refined the company's main practices. This highlights the case company's global localization strategy of "managing foreigners with foreigners." When connections in a network are strong and reliable, trust may be transferred from one entity to another.

M16: Because local employees know more about the local market and customers, they will be asked to do some related work. From the perspective of employee management, we will invite experienced local people to be lecturers for the induction training of local employees. In addition, we will invite them to attend awards and some

activities. That is to say, when there are many local residents, we are willing to let local people with higher position and better prestige to communicate.

Chinese bridging is exemplified by Chinese expatriates who act as the “middlemen” between their Chinese expatriate supervisors and the local workforce. Although Company A’s managers are currently required to have a certain level of English proficiency, in the early internationalization phase, their English ability was weak and many now hold high positions. Therefore, to better convey the company’s ideas, thoughts, or tasks, they often choose to inform their Chinese expatriate subordinates first, who then pass on the information to the local employees.

M17: Now, many supervisors may have been in China for a long time and then transferred overseas. Some of them may be weaker in English, so they are not willing to directly deal with local employees. Like our former supervisor, he basically asked me to pass on a lot of things to the local staff. Moreover, he did not manage many local employees. He may be in charge of the general direction. If he thought that the local staff did not do well, he asked me to remind them. Anyway, the communication with Chinese employees may be smoother, and the communication between local employees and supervisors is less.

In summary, an effective strategy has involved the utilization of intermediaries to facilitate communication and management processes. This approach has been particularly beneficial in bridging gaps between Chinese expatriates and local customers, often through the use of local employees as translators. Similarly, intermediaries have played a crucial role in integrating overseas subsidiaries with local employees, serving as a cohesive element. Additionally, Chinese expatriate supervisors have effectively managed local staff through their Chinese expatriate subordinates who act as intermediaries, thereby ensuring smoother operational integration. To clearly and visually present our findings, we have developed a conceptual model illustrating the “intermediary” bridging mechanism (see Fig. 1).

4.3. The outcomes of the interplay

Influenced by organizational HRM practices, Chinese expatriates’ working behaviors or modes conform to the host country’s basic norms and rules, which is more inclined to adopting the assimilation strategy. However, their business philosophy remains deeply influenced by their home country’s culture, which makes them more inclined to adopt the separation strategy. This resulted in a situation we refer to as “Western standards with Chinese philosophy.” Company A advocates continuous learning from the experiences of advanced Western enterprises; however, this is based on its own fundamental business philosophy. Working processes, standards, and professionalization can all be learned from the West; however, these are merely behavioral changes. The “brains” of most interviewees remain deeply influenced by Chinese culture and thinking patterns.

M11: At the operational level, we adapted to overseas, but the whole architecture still operated according to its parent organizational structure. We must study the local laws and management modes before deciding whether to establish a subsidiary here. But in terms of culture, there was no such thing that particularly catered to the locals. There will be a deep influence of Chinese culture in the specific communication in person to person, superior to subordinate, or project operation.

Although Chinese expatriates adjusted their working styles to meet overseas standards, this only applied to local employees. Domestic policies were followed for managing other Chinese staffs, resulting in “differentiated management.” Most interviewees provided detailed descriptions in terms of communication methods, overtime work, legal awareness, and so on. M1, who was assigned to Brazil as a supply chain

specialist, emphasized that the company was “more polite” to local colleagues and fully respected them due to their strong awareness of legal rights protection. Meanwhile, there was “not as much fuss” with Chinese employees. M9, a mid-level director of quality operations, also described differentiated management practices.

“Because Chinese employees were used to bowing to authority, the management to them is simple and rough, and it is OK to discuss and implement the task directly. However, local employees in Europe focus on personal thinking, so we should pay more attention to convincing them in a reasonable way before implementation of tasks. Due to the protection of human rights in the host country’s laws, local employees cannot be criticized openly and can only be gently reminded in emails at most. However, for Chinese employees, we still followed the way in domestic. Leaders can criticize at will, scold as you wish, without as much scruple”.

M17 expressed similar views and emphasized that the main reason for the differentiated management between Chinese expatriates and foreign employees were the differing expectations and requirements for both sides.

5. Conclusions and discussions

This study explored how mainland Chinese expatriates interact with different HCN subcategories in a new cultural environment, and the influence of organizational HRM practices on their interactions. An in-depth exploration of the rich qualitative data reveals the following three findings. First, Chinese expatriates interacted differently with different HCN subcategories: their interactions with local employees (customers) were need-oriented (utilitarian-oriented). Second, organizational HRM practices exerted a double-edged effect on the dynamic interaction process. In the short term, it facilitated expatriate–HCN interactions, thus contributing to the efficient fulfillment of assignment tasks. However, in the long term, it may hinder expatriates’ comprehensive understanding of the locality. Finally, under the influence of organizational HRM practices, Chinese expatriates demonstrated both separation and assimilation in their cross-cultural interactions, which can be explained by China’s cultural context.

5.1. Theoretical implications

This study enhances our understanding of expatriate adjustment by highlighting the significance of expatriate–HCN interactions and role of organizational HRM practices in facilitating this process. It contributes to the literature by providing a preliminary study on CMNEs’ expatriate management. First, it extends the expatriate adjustment literature in several ways. First and foremost, it delves into the intricate dynamics of Chinese expatriates’ interactions with different HCN subcategories. Specifically, we differentiate between local colleagues and customers in various scenarios, which has been largely overlooked in previous works (Osman-Gani & Rockstuhl, 2008; Wang & Varma, 2018; Michailova et al., 2023). Thus, we provide valuable insights into the tailored strategies adopted by Chinese expatriates when engaging with these distinct HCN subcategories. We find that Chinese expatriates prioritize task-focused relationships with local colleagues, as they are driven by the imperative to mitigate task uncertainty stemming from limited local knowledge. Conversely, they strive for stronger social bonds with local customers, demonstrating long-term commitment, which is a hallmark of Chinese culture that emphasizes relationship-building prior to collaboration. This “be friends first, then do business” approach underscores the centrality of relationship-building in the Chinese business context and is consistent with prior research (Guo et al., 2018). Additionally, echoing prior studies on expatriate adjustment (Haslberger et al., 2013) and acculturation (Sam & Berry, 2010; Ward, 2008), we emphasize the importance of recognizing the dynamic and interactive nature of expatriates’ cross-cultural interactions with the external

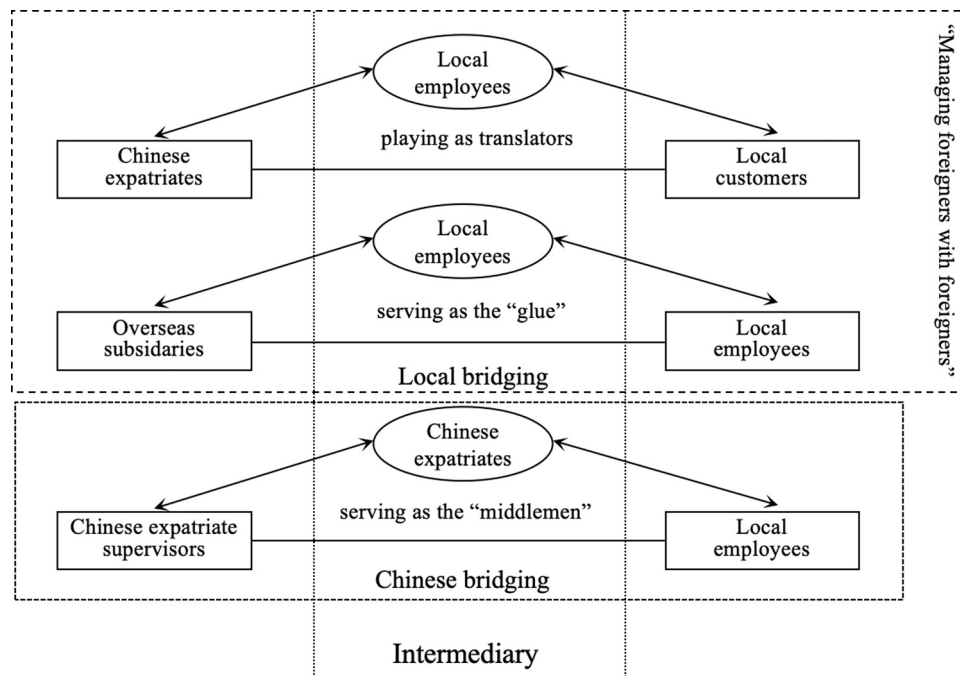


Fig. 1. An “intermediary” bridging mechanism.

environment. We highlight the dynamic and contextual nature of expatriate–HCN interactions, thus supplementing the theoretical literature with empirical evidence.

HCNs’ perception of expatriates is significantly influenced by various factors, as demonstrated by prior research (Varma et al., 2011; Yamao, Yoshikawa, Choi, & Toh, 2020). Our study underscores the crucial role of Chinese expatriates’ attitudes towards HCNs in shaping their interaction behaviors. These attitudes lead Chinese expatriates to categorize HCNs, and form in- and out-groups based on cultural aspects and HCN’s role in their work. This further substantiates the significance of the *guanxi* culture in interpersonal interactions. *Guanxi* is one of the most prominent characteristics of Chinese culture (Dong & Liu, 2010), and has been widely studied in the context of business and social relationships (e.g., Yang, 1994). The strength of *guanxi* largely influences the delineation between the in-group and out-group within an organization (Li, Xin, Tsui, & Hambrick, 1999). Our findings suggest that Chinese expatriates cultivate different *guanxi* with different HCN subcategories to facilitate task accomplishment and enhance work effectiveness.

Nevertheless, from the perspective of HCNs, we should engage in a more critical reflection on our findings. Some studies suggest that expatriates receive more support from HCNs when they perceive the former as in-group members (e.g., Leonardelli & Toh, 2011; Peltokorpi, 2020). Thus, HCNs’ perceptions, attitudes, and behaviors should be critically examined, particularly given the observation that Chinese expatriates prioritize work-related interactions and prefer socializing with their compatriots (Toh & Srinivas, 2012). Neglecting these factors can hinder expatriates’ efforts and the effectiveness of international management strategies aimed at promoting expatriate and organizational success (Michailova et al. 2023). The potential negative consequences of need- or utilitarian-oriented interactions between Chinese expatriates and HCNs should also be critically assessed. Given that local employees constitute the largest group of MNE workers and are critical stakeholders (Ando & Paik, 2013; Singh, Pattnaik, Lee, & Gaur, 2019), MNEs cannot overlook their significance. The knowledge and capabilities of local employees are vital to MNEs’ success in their host locations (Varma et al., 2016a). While the literature often suggests that expatriate–HCN interactions can bring numerous benefits (e.g., Kang & Shen, 2018; Vance et al., 2014), expatriates themselves often fail to capitalize on these opportunities (Van Bakel, 2019). Our results are consistent with

these findings and underscore the need for further investigations.

Second, this study provides novel insights into the double-edged impact of organizational HRM practices on Chinese expatriates’ adjustment. Positively, the organization’s tutorial system, cross-cultural training, and other related measures have created a friendly climate conducive for expatriate–HCN interactions (Hutchings et al., 2008; Zhang et al., 2018). Interestingly, we discovered that organizational HRM practices can inadvertently play a detrimental role, which has rarely been mentioned or paid attention to in the literature. From a long-term perspective, some HRM practices adopted by the case company, such as intermediary bridging mechanisms and logistical support, may not be universally beneficial for expatriates’ general adjustment and expatriate–HCN interactions. The intermediary bridging strategy is similar to the shadow management strategy adopted by Japanese MNEs in the mid-1980s when they invested abroad (Wong, 1996). Wong (1996) reported that some Japanese MNEs adopted a dual employment structure, whereby a small number of expatriates were sent from headquarters and local employees were hired to work in different departments of overseas subsidiaries. However, the intermediary bridging strategy adopted by the present case company tends to rely on Chinese expatriates to manage and control the business, and adopt an ethnocentric approach to staffing its overseas subsidiaries. Sonesh and DeNisi (2016) showed that that ethnocentrism among expatriates can lead to HCNs being categorized within the out-group. This categorization also creates a less supportive environment for HCNs around expatriates, resulting in lower role clarity and social support (Pichler, Varma, & Budhwar, 2012).

If HCNs regard expatriates as out-group members, the former may not be willing to share information with and may even intentionally withhold information from the latter (Peltokorpi, 2010, 2020; Peltokorpi & Vaara, 2014; Van Bakel, 2019). The perceived cultural incongruence and lower relative standing of host country managers are the proximal determinants of acculturative stress, which can negatively impact their work engagement (Lee, Bae, Lee, & Choi, 2019; Ljubica, Shaffer, Tin, & McKouen, 2019). Hitotsuyanagi-Hansel, Froese, and Pak (2016) argued that inter-group collisions between HCNs and expatriates may encourage the loss of HCNs due to unequal power relations and opportunities. Thus, in the long-run, this is detrimental to expatriate–HCN interactions and even more to retaining the local workforce.

Notably, the “differentiated management” strategy adopted by the case company appears to have further entrenched the binary distinction between Chinese and local identities, and warrants more in-depth discussion in the future.

In addition, the case company provided excellent logistical support, even acting similar to an “expatriate bubble” in some places. Local experience and diverse social networks facilitate the implementation of boundary-spanning activities, which, in turn, can enhance expatriates’ adjustment (Au & Fukuda, 2002; Wang & Varma, 2018). However, the “expatriate bubble” can weaken expatriates’ willingness to integrate locally and reduce opportunities to learn from the locals (Hendrickson, Rosen, & Aune, 2011; Huang et al., 2022). Limited interactions with HCNs can also hinder knowledge transfer, causing expatriates to miss opportunities to learn about local practices, consumer behaviors, and regulations from HCNs. Consequently, the international workforce’s potential may remain under-utilized, which may be detrimental to CMNEs’ internationalization. Moreover, the “expatriate bubble” can further reinforce group boundaries between expatriates and local employees. This can negatively affect foreign subsidiaries (Kang & Shen, 2018), such as reducing HCNs’ helping behaviors and lowering organizational identification (Pichler et al., 2012; Varma et al., 2016a). When HCNs disidentify with their MNE, they develop negative attitudes and behaviors towards the MNE and other organizational members (Dukerich, Golden, & Shortell, 2002; Froese & Xiao, 2012; Gamble & Huang, 2008; Knight & Haslam, 2010). This may involve withholding information, failure to provide assistance or even engaging in passive-aggressive behavior, thus preventing expatriates from integrating into the local environment and performing their work effectively. Therefore, our findings offer substantial insights into the role of HRM practices in expatriate–HCN interactions.

Third, this study contributed the limited literature on Chinese expatriates and the literature in the Chinese cultural context. We find that Chinese expatriates adopt a combination of separation and assimilation strategies in their cross-cultural engagement. Assimilation is more effective at the technical level, whereas separation is more prominent in the management philosophy. This nuanced picture of expatriates’ adjustment highlights the complex, dynamic, and contextual nature of their interaction processes, indicating that their choices are not always limited to a single approach in a given situation. Chinese expatriate managers blend host-country management practices with their own cultural philosophies and effectively navigate seemingly contradictory scenarios, demonstrating the adaptability of traditional Chinese culture. Chinese expatriates can sustain implicit communication and extensive management among themselves. When working with HCNs, they adapt their communication style to be more objective and transparent, while also incorporating foreign/Western refined management practices, such as professionalism in supervisor-subordinate relationships. Thus, our work emphasizes the importance of balancing local and Chinese cultural values, echoing previous findings (Fang, 1999; Faure & Fang, 2008) on China’s cultural paradox management capabilities, which have been strengthened in the globalized era.

As organizational environments become more global, dynamic, and competitive, contradictory demands are intensifying (Smith & Lewis, 2011). Fang and Faure (2011) significantly emphasized the necessity of understanding the paradoxical and continuously evolving nature of Chinese communication styles to attain success in commercial ventures when partnering with Chinese entities. Although this Confucian-oriented Chinese communication style remains meaningful for communication between Chinese and Western professionals, the paradox inherent in Chinese culture and communication has rarely been researched (Fang & Faure, 2011). Our study builds on this foundation and contributes to the extant literature through a detailed case study demonstrating the paradox of communication and management styles inherent in Chinese business practices, enabling us to gain a more profound understanding of this paradox within Chinese culture.

We further analyze the plausibility of this phenomenon from the

perspective of traditional Chinese cultural values. Chinese expatriate managers cope well with cross-cultural interactions’ intricacy, diversity, and dynamism by reflecting on Chinese traditional philosophies, which has also been highlighted by Ma and Tsui (2015), and Lin et al. (2018). Chinese philosophy, fundamentally rooted in the concept of “both-and” instead of “either-or” (see more details in Chen, 2002; Fang, 2006), finds inspiration in the dialectical interplay between *yin* and *yang*. The Yin Yang philosophy underscores that human beings, organizations, and cultures intrinsically crave variation and harmony for their sheer existence and healthy development (Fang, 2003). Drawing upon this philosophical foundation, Chen (2015) posits “boundary wisdom” is the cornerstone of successful cross-cultural interaction, which can be achieved through proactive engagement and a comprehensive approach encompassing acknowledgment, recognition, acceptance, and integration of diverse cultural elements. To nurture this boundary wisdom, cross-cultural interactions must be recognized as a dynamic and continuous process. In turn, this requires individuals to continually learn and adapt in new cultural environments and challenges (Chen, 2015). We observe a growing convergence of Western and Chinese cultural values and communication styles within the case company, particularly during dynamic expatriate–HCN interactions. Thus, we contribute to the expatriate adjustment literature by examining a relatively under-explored cohort of Chinese expatriates. It also offers valuable insights into the applicability of the “boundary wisdom” theory in the context of Chinese culture, thereby enriching our understanding of cross-cultural dynamics and strategies for effective adjustment.

5.2. Practical implications

First, organizations have a double-edged effect on expatriate adjustment, whereby expatriates’ socialization is selective. From the perspective of corporate development, expatriates only need to perform well in their overseas work and do not necessarily need to integrate deeply into local life. Therefore, balancing globalization and localization may benefit both MNEs and expatriates.

Second, enterprises should ensure that the appropriate personnel are placed in the appropriate positions to perform the specified tasks. Increasing the “bridging” communication mechanism between Chinese expatriates and locals has been effective and provided valuable experience for other enterprises to construct their own expatriate management systems. In particular, companies must select international talent proficient in multiple languages and familiar with multicultural backgrounds. For instance, companies can focus on China’s overseas students and overseas Chinese to construct an international talent recruitment system. This is because they are not only deeply versed in Chinese culture but also well-acquainted with local cultures and working practices, possessing substantial advantages in language proficiency.

Finally, stakeholders must be made more aware of the potential benefits of expatriate–HCN interactions and how these benefits can be utilized (Varma, Budhwar, Katou, & Matthew, 2016b). Organizations should strengthen connections between expatriates and local colleagues. Further, involving HCNs in decision-making can boost their commitment to the organization. Regular channels for feedback and suggestions, such as local advisory boards, can make them feel valued. Leadership, particularly expatriate managers, should be trained to act as cultural ambassadors and communicate organizational values and goals while respecting local customs. These practices can help to build a shared identity between HCNs and expatriates.

5.3. Limitation and future directions

First, cross-cultural interaction is a two-way process. HCNs can also learn about the expatriates’ home countries and gain insights into their experiences (Toh & DeNisi, 2007). Obtaining multiple perspectives from those around expatriates can provide valuable insights into expatriates’ socialization process (Fu et al., 2017). Further, reflecting on the

potential of social desirability, exploring the expatriate–HCN interactions from Chinese expatriates' perspective alone may bias the results. For example, Chinese expatriates may downplay local employees' role because of their own experiences and upbringing, or may have a biased understanding of local people. However, we only explored interactions from the perspective of Chinese expatriates; therefore, homologous bias was inevitable. Future research can incorporate data from the host population (e.g., asking local colleagues to report their interactions with Chinese expatriates and willingness to contribute to Chinese expatriates' adjustment) to provide a more comprehensive and insightful picture of cross-cultural interactions.

Second, the purpose of cross-cultural interaction is to establish social networks and seek support to complete overseas assignments better. Our findings not only help address research gaps but also lay a foundation for new research endeavors. Yet, much remains to be understood and can be gained by drawing on different disciplines and paradigms to inform our models. This study only explored how the two parties interacted but lacked an in-depth discussion of socialization outcomes. Cross-cultural interactions among expatriates are often aimed at creating high-quality interactions. The definition of high-quality interactions and factors that may affect them require further exploration.

Finally, Chinese expatriates' cross-cultural interactions may vary depending on the host country's environment in different regions. For example, our data suggest that Chinese expatriates interact more extensively and deeply with locals in Europe and the United States than with those in Africa. Other contextual factors, such as the host country's level of development, cultural similarities between expatriates and HCN coworkers, cultural distance between home and host countries, and organizational context, may also impact Chinese expatriates' interactions with HCNs (Mahajan & Toh, 2014). Future research can further explore the implications of these findings on expatriate training and development programs, and role of cultural differences in shaping expatriates' interactions with local stakeholders. Given the limitations of the collected data, cross-regional comparisons may be a valuable future research topic.

Declaration of Competing Interest

There is no conflict of interest among authors.

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Appendix I. Interview questions

1. Introduction/basic information:

- Name (Pen name or code name may be used) :
- Gender :
- Age :
- Assigned location :
- Assigned time :
- Position during the assignment :

2. The basic interview questions

- (1) When and where did/do you work overseas? Could you please

talk about your detailed expatriate experiences?

(2) What is your position in the representative office (namely, the subsidiary company) during the expatriation? Could you please talk about your work responsibilities?

(3) Who do you normally interact with overseas? And how you mainly interact with them? Could you please give some detailed examples?

(3) How often do you contact with the local employees in the overseas workplace? And outside of work? How is the private relationship with local employees?

(4) How many foreign friends are close to you? Why is that?

(5) Could you please talk about the main differences between local and Chinese employees? What is the reason? Illustrative

(6) Could you please talk about the company's localization strategy?

(7) Could you please introduce the cross-cultural management problem you face in detail? Illustrative

(8) Are there cross-cultural conflicts between local employees and Chinese expatriates within the company? If so, please give some examples.

(9) Could you tell us more about the measures your company has taken to avoid cross-cultural conflicts? Examples can be given.

Data availability

The data that has been used is confidential.

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信息传播与企业经营

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条件性与激励性促销语言在诱发前瞻性情绪上的分工机制 卢长宝 邓新秀 王啊婷



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夹缝求生:

矛盾视角下非体面工作从业者矛盾职业认同动态演化过程研究

○ 王红丽 李 振 徐光毅 郭子生 刘善仕

摘要 在长期的社会实践中,部分职业被公众“污名”,致使从业者对自身工作角色持有矛盾心理。本文对广东、湖北、江西省17家医院、福利院、养老院的50名护工和14位相关管理人员进行多次实地跟踪访谈,借助扎根理论方法做出以下发现:(1)护工群体经历“矛盾职业认同被动期→矛盾职业认同震荡期→矛盾职业认同主动期”3个阶段,最终实现与矛盾和谐共生;(2)被动期护工采取污名回避与抵抗、认命以及离职等适应不良策略,震荡期护工同时采取适应性(意义重塑、自我提升、心理资源自构)和适应不良策略(分离、成为黑陪),主动期护工则采取接受、环境建构、角色延伸等适应性策略;(3)护工矛盾职业认同潜在矛盾张力来自个体、组织和职业三个层面。尽管生存需求、公司压榨和职业污名这三类“压倒性”张力在客观上难以消除,但护工主观上收获权力感、意义感、胜任感等可有效缓解客观性矛盾张力;(4)医院、老乡圈子以及护工的个性特征是推动矛盾职业认同演进的重要动力。本文通过探讨护工矛盾职业认同演进、不同阶段应对策略及其矛盾张力变化,不仅揭示了护工矛盾职业认同动态演化规律,也为完善底层工作群体管理提供了实践启示。

关键词 非体面工作;职业污名;矛盾职业认同;护工;动态演化

引言

职业是社会分工的产物,凡是有益于人类社会的职业应无高低贵贱之分。^[1]然而,部分职业因有悖于社会关于“洁净”的标准而饱受质疑。^[2]Hughes较早提出非体面工作的概念。^[3]公众眼中的“污损形象”诱使从业者产生严重的身份认同威胁,普遍面临“你怎么能从事这种工作”的质疑。^[4,5]这不仅会影响从业者的身心健康,还可能导致组织低效运行。^[5,6]因此,深入探讨非体面工作从业者(以下简称“从业者”)身份认同问题,帮助和引导其构建有尊严的职业身份,具有重要的学术价值和现实意义。

然而,学界长期存在从业者职业身份认同与不认同的研究争议,^[7]这隐喻着他们的职业认同状态可能极为复杂。^[6]由于外部污名和自身限制,他们对自身职业或多或少持有矛盾心理,^[5,8,9]这种认同和不认同兼而有之的认同状态称为矛盾职业认同。^[10]矛盾视角有可能破解以往研究争议,然而相关研究仍存在几点不足:其一,已有关于从业者矛盾职业认同的研究仅止步于现象揭示或概念探讨;^[8,11]其二,矛盾职业认同的悖论属性促使个体有意识地克服认知冲突,以趋向于内在和谐,^[10]而这一动态重组过程并未充分讨论;^[12]其三,一旦承认矛盾职业认同动态性,则需突破“非此即彼(Either/Or)”的

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二元思维,探讨个体与矛盾和谐共生的可能性。^[13]

基于此,本文以护工为研究对象,重点探讨从业者矛盾职业认同的动态演化过程。理论上,基于矛盾视角揭示从业者矛盾职业认同的形成及其动态演化过程,有助于解决现有研究分歧;实践上,为管理者完善底层工作群体管理提供启发,使组织更加清楚怎样的制度设计能够引导从业者构建有尊严的职业身份。

一、研究背景

1. 非体面工作及其从业者职业认同困境

非体面工作是指社会所必需,但被认为不干净、有损身份的、道德败坏的或情绪受损的任务或职业。^[4] 本文所关注的护工群体,主要涉及身体和社交两个层面的肮脏属性。^[14,15] 其中,身体肮脏是护工在照顾病患时接触排泄物等造成。社交肮脏则指护工容易与雇主形成主仆关系。非体面工作本质上是一种职业污名,即外部群体的一种刻板印象。^[1,16] 职业污名作为一种客观力量,抑制护工积极自我意识的形成。^[14]

从业者的身份认同困境一直是学界关注的焦点问题,^[5,8,17,18] 他们往往会同时呈现出认同与不认同的身份叙述。^[19] Ashforth 等较早提出矛盾职业认同的理论猜想,认为职业污名致使从业者面临着严重的身份威胁,但这也可能形成“强”的群体文化,使从业者采取积极污名应对策略,进而形成矛盾职业认同。^[5] 而 Kreiner 等则认为普遍职业污名与积极防御策略的共同作用会导致从业者矛盾职业认同。^[8] 个体可以通过“自我与工作切割”和“自我与工作融合”来减缓自身的认知失调,^[7] 这可能是从业者面对“职业认同困境”的自我调和策略。然而,身份认同本质上是一个建构和重组的动态过程,矛盾职业认同无法长期处于认同与不认同均等的状态。^[12] 一旦考虑到矛盾职业认同的动态性,则需进一步考察组织和个体力量的干预作用。因此,需要进一步探讨矛盾职业认同的动态演化过程及其背后的推动力量。

2. 悖论理论视角下的矛盾职业认同

以往研究大都基于“非此及彼”思维探讨从业者身份认同问题,主要涉及社会认同理论、^[5,7,8] 资源保存理论、^[20] 认知失调理论等。^[21,22] 部分学者试图基于“矛盾”视角探讨此问题,但大都将矛盾职业认同视为认同和不认同的简单组合,并未深入剖析矛盾职业认同的构成要素及其演化机制。^[8,10] 悖论理论为理解个体矛盾心理提供了重要的理论视角。^[13,23] 本文拟基于悖论视角,考察从业者矛盾职业认同及其演化过程。

悖论源于相互依赖要素间的持续矛盾,并存在于作

用方向相反要素间形成的张力关系中。^[13,24] 张力(Tension)反映了个体所面对的无法相容诉求的程度,是构成悖论理论的核心概念。^[13] 悖论现象会同时出现在组织战略和个体心理层面。^[13,23,25-28] 就本研究而言,首先,从业者对非体面工作的认知具有悖论属性,矛盾张力使得从业者对自身工作角色持有矛盾心理。^[5,8,18] 从业者时常在职业价值与职业污名之间摇摆。^[29] 其次,根据悖论理论,环境因素和个体认知会对矛盾张力产生影响,^[13,30] 即引致矛盾职业认同的矛盾张力存在多方角力,而多方角力的力量变化可能催生不同的矛盾职业认同状态。最后,从业者的行动策略符合悖论理论导向下的策略出路,即接受、分化或整合迭代的应对策略。^[13] 现实的压力使得从业者仍需继续这份工作,不认同或远离工作自我会产生认知失调。^[31] 因此,从业者会采取矛盾的调和策略,以应对工作过程中的矛盾体验。^[32,33]

二、研究方法

1. 样本选择

本研究实地走访了17家医院、福利院及养老院,共访谈50名护工(受访人信息见表1)。走访单位覆盖不同规模、类型(医院、养老院等)以及不同地区(广东、江西、湖北)。访谈对象覆盖不同从业时间(1至25年)、科室(产科、外科等)、职责(专培、普陪)以及不同性别的护工。本文所采访的护工受到护理公司和医院的双重管理,以50岁左右的中年女性为主。

表1 访谈护工信息

访谈对象编号	性别	工作类型	访谈时长/min	科室	年龄/年	工作年限
F1	女	普通陪护	42	产科	54	7
F2	女	普通陪护	44	外科	55	6
.....						
F49	女	一对一陪护	32	高干病区	53	26
F50	女	一对一陪护	30	高干病区	50	22

注:信息根据案例数据整理。F:女性;M:男性

2. 数据收集

(1) 访谈准备:进行访谈前,初步拟定了访谈提纲。提前与医护或管理人员取得联系,在获得允许的情况下进入医院进行访谈。进入访谈现场后,由医护引荐,在获得护工同意的情况下进行访谈并录音。

(2) 深度访谈:访谈多在晚间护工相对空闲的时间进行,访谈地点为病房外走廊或休息间。访谈由几位作者共同完成,包括一对一和多对一。访谈结束后现场给护工20元红包奖励,再由医护人员引导下一位护工受访。每位护工访谈持续约15-60分钟,除个别护工因工作中断访谈,绝大部分访谈时间在30分钟以上。总访谈时

长约 30 小时, 共获得访谈稿约 22.6 万字。

(3) 三角验证: 在对护工进行访谈的同时, 本研究还对 6 位医护人员以及 8 位管理人员进行了访谈(见表 2)。这些人与护工朝夕相处, 能提供护工不了解或不愿透露的信息, 与护工访谈相互印证。在数据收集和分析过程中, 本研究还收集了新闻报道、调查研究等二手资料, 进一步确认了护工工作情况。例如, 以往新闻报道护工群体的老乡圈子在从业者进入护工职业、工作适应等方面发挥了重要作用。这与本研究访谈资料吻合, 形成三角验证(见表 3)。

表2 访谈医护与管理人员基本信息

访谈对象编号	工作类型	访谈时长/min
N1	妇科护士	35
N2	高干综合病区护士长	36
.....		
S7	护理公司管理人员	47
S8	护理公司管理人员	45

注: 信息根据案例数据整理。N: 护士; S: 管理人员

表3 材料汇总

类型	来源	内容
一手数据	护工深度访谈	50 位护工的深度访谈, 以及访谈时记录的观察材料
	医护与管理人员访谈	6 位医护人员以及 8 位管理人员的访谈
二手数据	新闻网站、知网等公开渠道检索	包含新闻报道(7 份)、调查研究(11 份)和网络护工访谈视频(8 个)

3. 分析策略

本文采用扎根理论方法,^[34] 使用 MaxQDA 2020 软件通过自下而上的编码过程, 逐步归纳出从业者矛盾职业认同的动态演化模型。^[35]

本文的编码策略包含以下四步。(1) 选定两位作者作为主要的编码员。在访谈录音转录后, 两位编码员先通读所有材料, 形成初步理解。(2) 进行开放性编码。开放性编码由两位作者共同完成。作者在第一次实地访谈后共同对访谈数据进行编码, 以统一基本的编码单位。每次访谈后, 两位作者背对背编码分别给材料贴标签(见表 4)。在标签的基础上, 作者将内涵相近的标签提炼为初始概念。编码工作每进行一到两天核对双方编码, 初次编码的一致性约为 90%, 少数不一致编码由几位作者共同讨论(见表 5)。(3) 进行轴心性编码。研究人员不断“往返”于文献与访谈材料间, 不断添加、修改以对应初始概念。这些概念部分来源于既有文献, 部分来源于对访谈材料的总结。(4) 研究人员依据在 71 个初始概念基础上得到的 35 个概念(AA1-AA35, 见表 6)进行选择性的编码。在职业矛盾等 14 个范畴基础上, 最终明确了以“矛盾职业认同”为核心, 护工“被动矛盾职业认同→矛盾职业认同震荡→主动矛盾职业认同”的

动态演化过程。需要注意的是, 该演化过程并不是一个必然的线性过程, 包含了护工离开职业岗位、停留在某一阶段或职业认同减少的可能性。

表4 开放式编码: 贴标签

代表性访谈材料举例	标签示例a(x)
F7 (a62-a77)刚开始, 还是有一点不适应(a70), 因为尿尿那些(a71), 后来慢慢的习惯了(a72), 也适应这种生活环境都适应了(a73).....	a70 初期不适应工作 a71 接触排泄物 a72 逐渐习惯工作

注: 此表仅做例举, 下同

表5 开放式编码: 概念化

标签汇总a(x)	初始概念A(x)
a71 接触排泄物 a132 帮病患吸痰 a163 给病患通便.....	A1 身体肮脏
a78 服侍老年人 a136 给病患喂饭 a184 给病患擦身.....	A2 社交肮脏
.....	

三、研究发现

1. 矛盾职业认同演化三阶段

分析材料后发现, 护工从始至终都呈现出矛盾职业认同的状态, 但会先后历经三个阶段(例如护工 F27)。

(1) 被动期矛盾职业认同形式及矛盾应对策略

① 被动矛盾职业认同: 难以认同又不得不认同

在第一阶段, 尽管护工表达了对自身工作的认同, 但护工对职业的态度具有强烈的消极色彩。例如, 护工 F21 认为: “像我的孩子永远不会干这样的工作.....以前我一个人没有文化, 为了生存只能做这样的工作。”

在材料中, 本文发现第一阶段的若干显著特征。其一, 从业者因自身条件限制, “只能认同”(F47) 自身是护工的事实。其二, 护工认为自己的职业选择出于无奈, 而自己也“只能做这样(指护工)的工作”(F21)。这种无奈暗含着对工作的抗拒。在访谈中, 该护工明确表示不希望自己的子女将来从事护工工作。在认同扩展模型中, 矛盾认同被看作高度认同和高度不认同的结合。^[10] 但与 Ashforth 等的观点不同,^[10] 本文此处所识别的矛盾职业认同中不认同成分大于认同成分。因此在从业初期护工群体呈现出不认同与认同二者兼有, 且以不认同为主的矛盾职业认同。本文将此定义为被动矛盾职业认同。

② 被动期矛盾应对策略: 污名回避、污名抵抗、长期从业抉择

在矛盾职业认同被动期, 由于护工的职业不认同占主导地位, 护工将采取适应不良的应对策略被动地应。其中, 最常见的适应不良策略是污名回避, 包括回避职业话题和抹除工作特征。^[32] 护工预见到暴露职业身份后可能会遭受歧视, 因此在工作场所外经常隐瞒所从事的职业。例如, 护工 F47 在外出时“不好意思穿”工服。由于护工工作被亲友认为是“下贱的事”(F14), 不少护

表6 编码结构表

对应初始概念A (x)	概念AA (x)	范畴	类属	
A1 身体肮脏、A2 社交肮脏	AA1 肮脏工作性质	X1 职业矛盾	矛盾职业认同被动期	
A3 本地人歧视、A4 家里人歧视	AA2 职业污名			
A5 年龄劣势、A6 学历劣势、A7 技能劣势	AA3 应职劣势			
A8 生存需求、A9 子女需求	AA4 谋生压力	X2 个体矛盾		
A10 人力不足、A11 缺少保障、A12 抽成过高	AA5 公司压榨			
A13 平台要求达标、A14 医院要求满意	AA6 工作要求			
A15 被迫从事护工但不允许子女从事、 A16 被迫从事护工但没脸面	AA7 难以认同又不得不认同	Y1 被动矛盾职业认同	矛盾职业认同震荡期	
A17 回避职业话题、A18 隐瞒工作身份	AA8 污名回避	Z1 被动阶段护工策略		
A19 疏离病患、A20 反驳污名	AA9 污名抵抗			
A21 离职、A22 认命	AA10 长期从业抉择			
A23 不再感到尴尬、A24 不再感到肮脏	AA11 工作脱敏	X4 震荡阶段矛盾力量		
A25 工作方法自主性、A26 工作流程自主性	AA12 工作自主性			
A27 获得家属 / 病患尊重、A28 获得医护尊重	AA13 他尊获得			
A29 职业认同与职业不认同交替主导	AA14 既认同又不认同	Y2 矛盾职业认同震荡	矛盾职业认同震荡期	
A30 开始认同工作	AA15 职业认同转变			
A31 聊天放松、A32 休息恢复	AA16 心理资源自构			
A33 培养耐性、A34 精进技能	AA17 自我提升	Z2 震荡阶段护工策略		
A35 职业意义重塑、A36 社会意义重塑	AA18 意义重塑			
A37 社交场域划分、A38 空间分离	AA19 分离策略			
A39 对公司不满、A40 脱离公司	AA20 成为黑陪	X5 主动阶段矛盾力量	矛盾职业认同主动期	
A41 影响病患、A42 影响医生	AA21 权力感			
A43 对自己的意义、A44 对社会的意义	AA22 意义感			
A45 技能胜任、A46 沟通能力胜任	AA23 胜任感	Y3 主动矛盾职业认同		
A47 显露出认同但心底里不认同、 A48 工作中认同职业但工作外隐瞒职业	AA24 显露认同隐藏不认同			
A49 无视歧视、A50 接受现实	AA25 接受职业			
A51 自行调解矛盾、A52 提出改进意见	AA26 环境建构	Z3 主动阶段护工策略	阶段演进催化因素	
A53 承担医护角色、A54 虚拟亲缘关系	AA27 角色延伸			
A55 集中培训护工、A56 现场指导护工	AA28 专科培训			
A57 院方调节护患矛盾、A58 调换护理对象	AA29 矛盾调解	W1 院方治理		
A59 院方激发护工潜能、A60 灌输亲情观念	AA30 激发潜能			
A61 老乡传授护理技能、A62 老乡传授工作经验	AA31 传授技能			
A63 老乡互相诉苦、A64 老乡互相慰藉	AA32 分担痛苦	W2 老乡圈子		阶段演进催化因素
A65 工作互相帮助、A66 生活互相扶持、 A67 互相肯定	AA33 互帮互助			
A68 积极面对困难、A69 对未来抱有希望	AA34 乐观	W3 个性特征	阶段演进催化因素	
A70 体谅病患难处、A71 换位思考	AA35 同理心			

工谈到工作时只表示自己在医院工作。

当职业污名带来的负面影响难以避免时，护工被迫采取污名抵抗策略，通过责备、疏远污名者的方式对抗职业污名。^[32]护工 F1 说到：“有的人（家属）看不起我……你有本事就不要请我。”

访谈得知，一些雇主对待护工态度恶劣，“好像我是机器一样”（M5），因此护工在面对雇主歧视时态度强硬，甚至以罢工相威胁。

在矛盾职业认同被动期，护工（特别是年轻从业者）的流失率较高。与年长的护工不同，年轻从业者的条件更好、职业选择更多，因此“两三天就走了”（F39）的情况屡见不鲜。据管理人员（S5）描述：“每天来面试的有7、8个人，但最终留下来的每月只有5、6个。”

事实上，仅有极少数人在被动期内决定继续从事护工工作。部分护工经过现实评估，发现护工已经是相对理想的就业机会，才忍受职业污名和工作压力选择长期从业。例如，护工 F15 说：“我就是缺文化，我干其他的，好不到哪里去啊。”

认命是一种消极的接受，指护工承认自身不足并对现实逆来顺受。^[32]访谈中，处于矛盾职业认同被动期的护工悲观地认为自身难以改变从事非体面工作的命运。此时护工缺乏主动做出改变的想法，并将工作条件改善寄希望于运气。

（2）震荡期矛盾职业认同形式及矛盾应对策略

① 矛盾职业认同震荡：认同与不认同交替主导

护工选择长期从业后进入矛盾职业认同震荡期。此阶段，护工矛盾职业认同向积极方向转变，并且职业认同与不认同交替主导。本文将此定义为矛盾职业认同震荡。

许多护工表示，随着工作的深入，自己更加认同这份工作。“刚开始我是拒绝的，我不喜欢这份工作。后来我第一个（病患）让我挺有信心的（F45）。"

由访谈材料可知，护工与病患之间“互相需要”（F45）的互惠关系，以及护工对工作的适应都淡化了护工工作的消极面，促使其职业认同状态发生积极转变。虽然护工对自身职业的态度有所改观，但导致其难以认同的消极因素依然存在。例如，护工 F7 谈到自己认同状态的变化：“别人骂起来的时候就觉得很自卑。病人认可你，那自己当然开心。”

对长期从业者而言，工作中时常遇到的负面事件都会反复触发其职业不认同。因此护工认同和不认同交替主导的震荡状态可能会持续存在，使护工对自身职业长期抱有复杂的感情。例如，从业17年的护工 F4 说到：“现在我觉得心里好累，但我还是喜欢这份工作。”

② 震荡期矛盾应对策略

a. 适应性策略：心理资源自构、自我提升、意义重塑
震荡期的护工呈现出一定程度的职业认同感，因此会建构积极资源来应对工作中的消极因素。

首先，护工不但要满足病患、医院和护理公司的要求，还需要额外耗费资源应对污名压力。正如护工 F18 所说：“人如果是心累了你就很难恢复过来。”为了应对心理资源损耗，震荡期护工会在工作中主动构建心理资源。资源自构是指护工积极恢复心理资源的策略，闲聊是其中之一：“真的是好烦、好累的时候，跟个老乡聊聊天就很开心（F16）。"除此之外，护工还会通过带病患“走一下，陪他们聊聊天”（F4）的方式，从繁重的工作中解脱，

以恢复损耗的身心资源。护工只有通过长时间工作的空隙休息恢复,才能有足够的心理资源持续面对繁重的工作。

其次,为了应对工作要求,护工会采取自我提升策略精进自身的知识技能。自我提升指护工积极提高工作技能和改进服务态度。以护工 F18 为例:“医生和护士在询问病人状况,如果你用心的话还可以学一些护理知识。”一般而言,护工只需遵从医嘱照料病患,无需了解病人的治疗过程。但访谈中护工开始意识到自身不足,将工作视作学习机会,主动学习医护知识,提升工作技能。同时,他们的工作态度也在发生转变。例如, F2 意识到了耐心在工作中的重要性:“一开始心里也烦,但我们自己不能不耐烦了。”通过自我提升,护工能够更加自如地应对工作。

最后,护工采取意义重塑策略获得职业意义感。意义重塑指通过创造意义或重新评价职业来赋予职业积极的意义。例如,访谈中受访者提到工作的社会意义,证明职业的正当性:“那些家属他很忙的,没有时间赶过来。然后病人有人照顾,她自己恢复就会比较快(F27)。”此外,护工还会强调职业对自己的价值。如护工在访谈中突出工作比较“自由”(F8)的特点,让其得以平衡家庭和工作。通过以上适应性策略,护工得以维持长期从业状态。

b. 适应不良策略:分离、成为黑陪

与此同时,工作中消极因素会激起职业不认同,导致护工采取适应不良的应对策略。分离策略指护工有选择地对少部分人公开职业身份,而对大部分人保密。^[36]医院内的医护与护工长期相处,了解护工的价值和艰辛。病患与护工互相需要,因此护工在医院内较少遭遇歧视,在客观上形成了社会缓冲,^[33]也为分离提供了条件。在访谈过程中,许多资深护工认为和病人相处“很开心”(F3)。但当被问起在医院外是否会谈论自己工作时,护工则表示自己“不会和别人聊太多”(F2)。

面对护理公司“压榨”和生存需求的双重压力,部分护工会选择成为黑陪,脱离护理公司私下承接护理业务。管理人员 S8 介绍到:“黑陪有些以前也是我们护工……有些护工就为了节省开支(转为黑陪)。”此类护工在长期从业过程中掌握了丰富的工作技能,而且还与病患、家属和其他护工等建立了牢固的人际关系,这是他们成为黑陪的重要原因。值得注意的是,护工各阶段策略选取是一个更新迭代的过程。在震荡期,护工同样可能采取污名回避、污名抵抗等策略。

(3) 主动期矛盾职业认同形式及矛盾应对策略

① 主动矛盾职业认同:显露认同隐藏不认同

有少数护工对职业表现出高度认同,同时也隐晦地流露出职业不认同。本文将认同显露与不认同隐藏共存的职业认同状态称为主动矛盾职业认同,认为这部分护工处于矛盾职业认同主动期。此阶段,护工无视脏污工作环境和污名压力的负面影响,对自身工作表现出极高热情。但同时又不愿向身边人提起自己的工作(F41)。访谈显示,主动期护工会积极维护自身的职业身份,甚至以职业为荣,认为自己作为一个护工“很骄傲”(F27)。相较于震荡期,护工职业不认同以更加隐晦的方式表现出来。例如,护工 F27 表示这份工作“很有意义”,自己“很认可”这份工作,并详细描述了自己如何克服内心的“障碍”,打破自己与病患间的“隔阂”。但当被问到“是否觉得工作有点肮脏”时,她却抹去眼角的泪水。调整情绪过后,护工 F27 继续向本文作者讲述病患有多么需要自己。

可见,访谈给护工提供了一个跳出职业身份的机会。当护工以局外人的眼光重新审视自己职业时,才重新意识到工作不体面,流露出隐藏的职业不认同。

② 主动期矛盾应对策略:环境建构、角色延伸、接受

如前所述,职业认同促使护工采取适应性应对策略,^[37]主动期护工会采取更加积极的应对策略。

a. 环境建构的行动策略。环境建构指护工主动建构有益于自身工作的社会环境,^[38]包括人际关系和工作环境的改善。例如,护工 F16 描述到:“有个病人家属投诉(到)公司……但是我把道理跟他说清楚,后来他就不说什么。”主动期的护工会更加聚焦于解决问题,而不是一味地回避或抵抗。通过开诚布公地与雇主沟通,缓和与雇主之间的紧张关系。此外,护工还积极改造工作环境,例如主动提出使用对讲机改善沟通方式(F35)。

b. 角色延伸策略。主动期的护工会扩展职业身份的边界,赋予自己更加积极、正面的形象。有的护工将自己比作“半个医生”(F43),通过赋予自己医生身份的方式进一步提高工作意义感。除此之外,访谈中护工最常提到的是将病患看作家人对待,将自身角色从下人转变为病患的亲人。例如,护工 F33 这样说道:“反正病人给我,就是我们的父母。你(病患家属)就不要想别的,把他全给我就行了。”

c. 接受策略,即护工接受并坦然面对职业矛盾张力。^[23]接受与认命都意味着从业者承认自己的护工身份。但与认命不同,采取接受策略的护工能意识到职业的两面性,坦然面对工作。例如,护工 F43 表示:“那个脏是你心甘

情愿喽。想挣这个钱就不要觉得辛苦。”主动期的护工意识到非体面工作中矛盾张力将持续存在,因此护工能够接受工作并不是“完美的”(M6)。采取接受策略的护工不再将工作视为一种负担,而是看作自己“分内的事情”(F28)。同时,在面对污名压力时,他们会“不理别人的看法”(F24),以一种更加温和的方式应对污名。

2. 矛盾职业认同背后的多方角力

根据前文分析,护工从业者会经历矛盾职业认同被动期、震荡期和主动期,每一阶段的认同状态以及应对策略都大相径庭。究其原因,主要是护工各阶段面对的矛盾张力不同。分析发现,护工主要面临来自职业、组织及个体三方面的矛盾张力,且矛盾张力存在阶段性差异。

(1) 被动期矛盾张力

① 职业矛盾张力

职业矛盾张力来源于非体面工作以及职业污名。以护工 F26 为例:“病人拉屎拉尿都是要我们来搞的……在别人的眼里我们做护工就是最下流的。”由于不少病患都丧失了自理能力,护工需要处理病患的排泄物、体液等,许多刚入职的护工难以适应,“自己都觉得想吐”(F39)。护工不仅要承受生理上的肮脏,护理病人也让他们觉得自己“很低下”(M9)。例如,护工 F49 认为有的人说话“很直接”,甚至曾病患表示“我饿死都不干(护工)。”作为外来务工人员,护工遭受本地人歧视的现象常有发生。“现在像广州这些人的话,他们这些有钱的人就说你(为什么)干的这行工作啊?(F15)”

② 组织矛盾张力

组织矛盾张力来源于管理方的高工作要求以及护理公司对护工的压榨。医院对护工的要求以病患满意为标准,但缺少明确指标。护士 N2 提到:“你也不用跟我讲你给他(病患)冲了多少次凉啊,或者干了啥东西。标准就掌握在我、在病人的脸上。”而护理公司对护工的要求更为简单,“只要没有被病患投诉”(F48)。虽然护理公司的要求不高,但由于护理公司收取管理费用却不给予相应的福利保障,护工对公司的管理怨言颇多。此外,护工常常超负荷工作,一位护工通常需要照顾 3 个以上的病患。已经离开公司的护工 F36 抱怨道:“公司 250 元中要抽 60……像他那个公司里面,另外一个(护工)看几个(病患)……然后公司根本就没有任何保险。”

③ 个体矛盾张力

对大部分护工而言,选择这份工作既是受限自身条件,也是迫于生活压力的无奈选择。一位有两个女儿的单亲护工表示:“反正你为了孩子……有文化我肯定也不想干,我们干的是最底层的活(F15)。”

通过资料收集和访谈发现,护工普遍学历低,年龄大,并且缺少职业技能。因此在护工看来,自己“只能做这个活”(F48)。而护工工作入职门槛较低,已经是相对宝贵的工作机会。同时,由于强烈的家庭动机和养家糊口的需要,他们不得不继续从事护工工作。例如,护工 M59 表示自己的儿子还没结婚,所以“我只能还能赚点钱”。

(2) 震荡期矛盾张力变化

进入矛盾职业认同震荡期,护工从业一定时间后,较好地实现工作脱敏,并获得工作自主性和他尊,从而有效缓解职业、组织以及自身三方面的矛盾张力。

① 工作脱敏

工作脱敏指护工不再感到肮脏的过程。^[4]工作脱敏既是护工长期从业基本的条件,也是护工必然经历的过程。例如,护工 F29 表示:“有时正在吃饭的过程中(病患)拉大便,我们要马上处理。现在已经适应了,洗干净了就继续去吃饭。”

非体面工作给新入职的护工带来了心理和生理的强烈冲击,让许多护工“接受不了”(M20),这也加快了筛选从业者的过程。许多护工表示,“一开始觉得有些恶心”(F37),但随着从业时间增加,逐渐消除了生理和心理上的厌恶,“已经习惯了”(F27)。

② 工作自主性

工作自主性指护工能够自由安排工作方式和流程。^[39]由于护理公司或医护并不能监督每一位护工,因此在培训并掌握工作技能后,护工能够获得较高的工作自主性。例如,一位照料孕妇的护工说到:“就是病人需要哪一方面,就要帮他在哪一方面去做(F45)。”

由于顾客病情、身体状况、性格和需求存在差异,每一个病患的护理需求各不相同,这要求护工要根据病患需求进行个性化护理。许多资深护工在工作中形成了一套自己的工作流程:“首先干什么,后面干什么,这些我们都得自己知道(F13)。”

③ 他尊获得

一方面,病患因为护工精心照料得以加速康复,家属也减轻了负担。另一方面,家属不能每时每刻监控护工的工作,“怕你(护工)对我老头子有什么不好”(N2)。因此护工在工作中也能得到病患和家属的尊重。正如一位护工的描述:“有些人说(家属)‘阿姨,你这份工作也是慈善工作(F33)。’”

护工在工作收获他尊后,会向患者提供额外高质量的服务,与患者、家属建立更加密切的联系。工作中的互惠提高了护工的职业认同。^[15]

④ 震荡期新增力量与原有张力的对抗过程

首先,工作脱敏让护工不再因工作身心不适,缓解了其职业矛盾张力。其次,护工获得他尊一方面表明护工的工作质量达到了病患要求。例如,护工F40说到:“有的病人一开始不好,但后面慢慢做好,也尊重你。”因此在满足患者要求后,工作要求引起的矛盾张力得以缓解;另一方面尊重也将护工和病患置于更加平等的地位,缓解了社交肮脏引起的矛盾张力。例如,护工F22描述到:“互相尊重嘛。”最后,护工获得工作自主性表明护工受到的监管减少,这让护工能够按照自己的方式灵活处理工作,缓解了工作要求带来的矛盾张力。

(3) 主动期矛盾张力变化

迈入矛盾职业认同主动期,护工在主观上进一步获得权力感、意义感以及胜任感等对抗矛盾张力的积极力量。

① 权力感

权力感指护工在工作中能够影响他人的感受。^[40]护工在工作过程中的权力感来自照顾社会地位更高的病患。例如,一位护工这样描述自己照顾一位领导的情形:“2004年,那个时候他是不起的人物,好多博士来看他(F50)。”

此外,护工在工作中有时相当于“半个医生”。不少家属由于工作繁忙,“完全放手”(F13)将病患托付给护工照料。由于护工与病患接触最为密切,往往更了解病患情况。因此,医生和护士不仅“也会问护工的意见”(F12),甚至护工还能够影响医生的诊断。因此,护工在工作中获得了权力感。

② 意义感

意义重塑是从从业者解释和理解自身职业价值的有效途径。访谈中,护工这样理解工作对病患的意义:“病人不舒服的时候,我能帮到他,那就是有意义的(F28)。”

通过意义重塑,护工清楚地认识到自己对病患的重要意义,在工作中体验到更强烈的意义感。护工不仅意识到工作对病患的重要性,还关注到工作对社会的意义。例如,护工F15认为:“我们(护工)对这个社会是最有用……没有我们病人也没法生存。”

意义感让护工更加明确自己的工作目的,由于个体有构建积极自我意识的倾向,^[5]意义感提升了护工对自身职业的认同感。

③ 胜任感

胜任感指个体感知到胜任工作的能力和信心。^[41]护工对自身能力的信心来源于长年积累的从业经验:“我们要会拍背,家属没有我们拍的舒服……我都拍了十多年了,这能比吗?(F19)”

丰富的工作经验让护工应对工作轻松自如,因此护

工能够克服工作要求的张力。这种经验不断累积,最终变为护工自如照料病人的能力。例如,护工F49这样描述自己如何应对病患:“有那些脾气暴躁的,到了我手里就好了……不是开玩笑,得有一套把病人搞定。”

此时,护工形成了一套应对病患的成熟方式,有自信也有能力处理“难搞的病人”(F33)。

④ 主动期新增力量与原有张力的对抗过程

在矛盾职业认同主动期,护工收获的权力感、意义感以及胜任感可以进一步缓解职业、组织以及个人三方面的矛盾张力,实现护工与矛盾职业认同的和谐共处。胜任感和权力感表明护工基本上克服了应聘劣势和工作要求的矛盾张力。而护工在工作中获得的意义感则在主观上与职业污名、生存需求和公司压榨这三类“压倒性”矛盾张力形成对抗。例如,护工F33认为工作“就好像做善事一样”。首先,“做慈善”“有意义”意味着护工在工作中开始追求精神上的满足,而不只是为了解决温饱问题,削弱了生存需求的矛盾张力;其次,将工作理解为慈善也意味着护工精神需求的满足,削弱了公司压榨带来的矛盾张力;最后,工作过程中体验到的意义感是对职业污名的有力回击。因此,护工在主动期能够对自身职业表现出较高的认同。

3. 矛盾职业认同三阶段演化助力

从上文可知,绝大部分护工在被动期离职,部分护工长期处于震荡期,只有少数护工能进入主动期。这说明护工进入主动期既有护工自身因素,也包含了外部力量的干预。

(1) 被动期→震荡期:院方助力与老乡圈子推动

在被动期,老乡圈子和医院在护工技能学习和适应工作方面提供帮助,削弱矛盾张力的负面影响,推动护工由被动期向震荡期转变。具体而言,在护工由被动期向震荡期转变的过程中,得益于医院技能培训和老乡间技能传授,两种方式共同让护工掌握技能并更好地适应工作。护士N2这样介绍到:“有些护工不太(懂得)配合的,所以我就要培训到她。”

但院方和护理公司的培训通常并不足够。老乡间既会传授自己总结的工作技巧,也会传授与患者、医生、公司打交道的经验。护工F27讲述老乡如何帮助她快速适应工作:“他(老乡)教别人的时候不保留,你进入状态也就更快了。”

在护工掌握工作所需的技能后,既能更加自如地应对工作要求,也能满足病患护理需求,从而获得病患的尊重。同时,也只有当护工具备独自护理病患的能力后,才可能获得工作自主性。

医护人员还扮演了冲突调解者的角色。例如,护士N3描述对护工的管理:“如果家属觉得这个阿姨不合格,我们会找阿姨谈话,告诉她有这么一个事情,应该怎么样做。”

医护的调解减少了护工与病患之间的摩擦,缓解了工作要求和非体面工作带来的矛盾张力,也帮助护工更好地适应工作。

除此之外,当工作遇到困难时,紧密的老乡圈子为护工分担了痛苦,提供了精神慰藉。例如,护工F43讲述了老乡对她的帮助:“在老乡那里,相互倾诉,大家都是这样,也就慢慢可以接受。”

由于工作时间长,并且绝大多数时候只能与病患相处,同科室的老乡是护工为数不多的倾诉对象。许多护工在工作不如意时,都会“向老乡吐苦水”(F23)。因此,老乡圈子的存在很大程度上为护工分担了工作中的苦闷。

(2) 震荡期→主动期:院方赋能、老乡圈子催化与护工个性特征

护工进入主动期的显著标志是对工作形成了明显的正面感知。护工由震荡期迈入主动期的过程中,院方赋能和老乡圈子支持增强了护工适应性策略的积极效果。首先,院方积极激发护工能量。正如护士N2所言:“一个人她是有能量的!看看你的能量有没有发挥出来!”

护士N2要求护工对待病患“像父母一样”。这进一步促进了护工在主动期延伸自己的角色,与病患及家属建立虚拟亲缘关系。让护工将病患当作家人看待不仅提高了护工的服务质量,还帮助其寻找到工作的意义。

其次,护工由震荡期向主动期转变的过程中,老乡圈子发挥了催化作用。老乡在工作中互相帮助,生活上互相照应,增强了护工意义重塑、心理资源自构等适应性策略的积极作用。例如,护工F25讲述了工作上遇到问题时老乡对他的帮助:“我们老乡都是互相帮忙,有什么困难都是互相帮忙。”

并且,老乡在交流过程中互相肯定职业意义,“他们都说这份工作是积德,帮好多人”(F22)。老乡间互动增强了护工的意义感和胜任感,也有助于护工进入主动期。

最后,护工个性也是决定其能否迈入主动期的关键因素。访谈发现,处于主动期的护工普遍表现出乐观或同理心等积极的个性特征。例如,护工F8讲到自身境遇:“我得过乳腺癌。医生说你开心快乐,你就多活一两年。我现在有八九年了……我是对人好,对我自己好。”

从材料可以看出,乐观的护工能用积极的心态面对发生在自己身上的不幸,并保持对美好未来的向往。而具有同理心的护工则更能够换位思考,更加清楚地认识到自身工作对病患的意义。例如,护工F18说道:“看

到老人家的背影……虽然帮不到大忙,但感觉就比较触景生情,触动到自己。”

富有同理心的护工对病患的无助和困难更加感同身受,也更愿意额外付出努力帮助病患。因此,同理心较高的护工更可能感受到工作的意义和价值也能够体谅病患的难处。例如,护工F46在照顾无理取闹的病患时这样说道:“有的(病患)刚做完手术不能动,非常娇气,特别都是女人。”

在院方赋能、老乡圈子催化以及护工积极个性特征的共同作用下,护工采取的适应性策略产生了更强的意义感、胜任感和权力感,共同推动护工迈入矛盾职业认同主动期。

综上,在主客观力量共同作用下,最终形成“被动矛盾职业认同→矛盾职业认同震荡→主动矛盾职业认同”的动态演化过程(如图1)。

四、结论与讨论

1. 理论意义

(1) 本研究基于“矛盾”视角探讨护工职业身份认同这一议题,发现护工从始至终都呈现出矛盾职业认同。这突破既往研究“非此即彼”的二元思维,^[20-22]破解从业者要么认同要么不认同的研究争议。同时,本研究也回应 Kreiner 等呼吁关注从业者的矛盾心理,护工在多重矛盾张力的职业认同过程,恰恰折射出从业者真实的职业认同状态。^[8]此外,以往研究大都将矛盾职业认同视为反常的认同状态,^[10,42]本文发现矛盾职业认同是从业者面对“职业认同困境”时的自我调和策略,具有潜在的积极影响。

(2) 本研究基于“过程”视角探究护工矛盾职业认同的动态演化规律,还原了护工身份认同的动态演化本质。身份认同本质上是一个动态重组的过程,^[12]而矛盾职业认同具有趋向内在和谐的动力。^[10]以往研究仅仅揭示了从业者矛盾职业认同是否及为何存在,^[8,18]未能进一步探讨矛盾职业认同的变化过程。本文剖析护工矛盾职业认同的动态过程,发现引致矛盾职业认同背后的矛盾张力存在多方角力,而多方角力的力量变化以及矛盾张力的互动演化可能催生不同的矛盾职业认同状态,并将其识别为矛盾职业认同被动期→震荡期→主动期三个不同阶段。这既还原了从业者身份认同的动态本质,也揭示了其在矛盾职业认同状态下的自我和解过程。

(3) 本研究通过对护工三阶段差异化矛盾应对策略的剖析,揭示了从业者不同职业认知状态下的行为反应。相关研究表明对不同工作阶段的从业者采取差异化

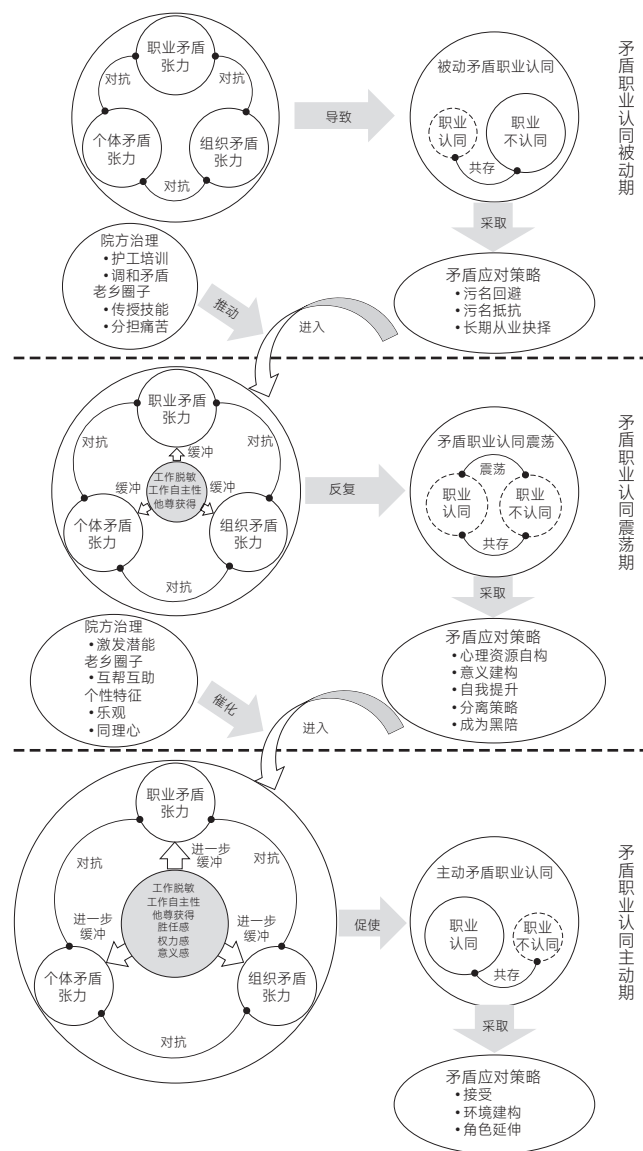


图1 矛盾职业认同演化

管理策略,可以帮助其更好地适应工作。^[33]而各阶段悖论产生的独特张力,意味着从业者矛盾职业认同的应对策略也可能存在阶段差异性。以往研究大都考察特定情景下矛盾张力的应对策略,^[13,25]本文发现护工应对策略呈现由被动期的适应不良策略,到震荡期兼具适应不良和适应性策略,再到主动期的适应性策略变化过程,从业者在不同阶段存在差异化的应对策略。这丰富了学界关于矛盾应对策略的认识。同时,本研究发现从业者放弃在矛盾对抗力量中的持续挣扎,接受与矛盾共生,这是解决矛盾问题的长久之计。这也恰恰呼应到中国“阴阳文化”和谐共生的精髓,矛盾演化结果并不必然是一方战胜另一方,还有可能与矛盾和谐共生。

(4) 本研究基于“悖论”视角揭示护工矛盾职业认

同动态演化背后的多方角力,也即矛盾张力,深化学界对从业者矛盾职业认同演化动力的根源性认识。以往研究在组织框架内分析矛盾张力,局限于组织和个体之间的对抗。^[13,25]本文发现在职业污名的情境中,职业本身凸显为一个重要的张力来源,与组织、个体张力并存且形成对抗。此外,以往研究大都聚焦于探讨矛盾张力的成分与结构,未能深入探讨不同主体下矛盾张力的相互对抗角逐过程。^[13]本文发现尽管职业污名等客观性矛盾张力难以克服,但护工在主观上收获权力感、意义感、胜任感等,对客观性矛盾张力形成了有效缓冲。而且医院人性管理、老乡圈子支持以及护工的积极个性特征是推动阶段演进的重要动力。矛盾张力的变化与主客观力量共同推动了护工矛盾职业认同的动态演化。

2. 实践启示

(1) 对于管理者而言,关键在于如何弱化从业者面对的客观矛盾张力,同时强化其对抗矛盾的力量。组织可以完善相应的管理制度提升他们的工作权力感,并进一步完善工作设计,合理分配任务与人员配置,提高护工的工作自主性。此外,管理者不仅要要对护工进行工作技能方面的培训,还应对其进行人际关系技能方面的培训,打造护工与雇主(病人/家属)的良好关系,提高雇主对护工的信任和尊重。

(2) 在不同工作阶段,护工呈现出差异化的矛盾职业认同特征。处在被动期的护工普遍表现出强烈的冲突和挣扎。处在主动期的护工尽管无法完全消除矛盾张力,但能最大限度地实现个体与矛盾和谐共处。对于管理者而言,可以针对矛盾职业认同阶段性特征采取相应的管理策略,尽量缩短矛盾职业认同被动期和震荡期。对于长期从业的护工,则应提供更多工作支持和情感支持,引导其构建有意义的职业身份。

(3) 护工群体总体经历被动期、震荡期、主动期三个动态演化阶段,如何推动护工矛盾职业认同阶段转变至关重要。研究发现组织的人性化管理和老乡圈子的社会支持是推动护工矛盾职业认同阶段演进的重要动力。管理者可以充分发挥老乡圈子情感连接和技能传授作用,让护工更好地适应工作。此外,护理公司作为护工的派遣单位,需要在技能培训、权益保障等方面为护工提供更多的组织支持。

3. 研究不足与未来研究方向

(1) 样本的外推范围问题。本文的研究对象集中于护工群体,确保了在单个群体样本上的理论饱和。然而,护工工作只涉及身体和社交两方面的脏污属性,但具备不同脏污属性的非体面工作者可能存在反应差异,^[43,44]

而这种差异性的反应在中国情境中可能更加明显。例如, Chan 等认为中国人对艰苦工作具有很强的忍耐力。^[45] 因此, 中国人可能更能接受涉及身体、社交肮脏属性的工作, 甚至将从事这类非体面工作视作对家庭做贡献的重要体现。而中国突出的“面子”文化, 容易将非体面工作与个人“面子”结合起来。^[46] 这种“丢面子”的心理体验, 最可能出现在涉及道德肮脏的从业者身上。因此, 通过对不同类型的职业进行对比分析, 可能会得到更加有价值的研究结论。(2) 样本选取缺少病患及家属。本文的受访对象以一线护工和相关管理人员为主。考虑到病患大多卧病在床, 并且进入现场访谈有违医院“安全规定”(S8)。因此, 医院并未准许对病患进行访谈。此外, 病患家属多数时候不在医院陪同, 因此难以访谈家属。

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Running with Scissors: A Study on the Dynamic Evolutionary Process of Ambivalent Occupational Identification of Non-decent Workers

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Abstract Occupations are a product of the social division of labor, and there should be no distinction between high and low occupations that are beneficial to human society. However, some occupations have been questioned because they run counter to society's standards of cleanliness. Despite the important social value of such occupations, the tarnished image in the eyes of the public poses a serious identity threat to workers. They commonly face the questioning of "how can you do this kind of job" from the dominant values of society, which not only affects their physical and mental health, but also contributes to the inefficient functioning of organizations. Therefore, it is of great academic value and practical significance to explore in depth the issue of the identity of non-decent workers and to help and guide them to build a dignified occupational identity.

The long-standing academic controversy over the study of occupational identification and disidentification among non-decent workers, implying that their occupational identity states can be extremely complex, and that it is difficult to be at either end of a conscious choice of identification or disidentification. Non-decent workers are more or less ambivalent about their occupations, and this state of identification with both identification and disidentification is known as ambivalent occupational identification. However, most of the current research on the ambivalent occupational identification of non-decent workers stops at revealing the phenomenon and does not examine in depth the dynamic evolution process of the ambivalent occupational identification of non-decent workers, and it is not yet clear about the characteristics of the stage of the non-decent workers' ambivalent occupational identification, their coping strategies, the inherent tensions, and the dynamics of the evolution of the non-decent workers' ambivalent occupational identification.

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tion of the human-bot collaboration patterns from the microscopic human-bot attributes, and uses process mining, Interaction effect testing and other methods to test the model hypotheses. The results show that: (1) The cognitive attributes of humans and the perceptual attributes of bots can facilitate the formation of different types of human-bot collaboration patterns. In details, humans' cognition ability, bots' intelligence level and perception ability all promote the formation of sequential human-bot collaboration patterns, while humans' cognition structure plays a negative role; humans' knowledge structure and cognition ability, bots' perception ability significantly promote the formation of cyclic human-bot collaboration patterns, while bots' intelligence level does not work; (2) in all types of human-bot collaboration patterns, there is an interaction relationship between the cognitive structure of humans and the perceptual capabilities of bots; (3) task complexity moderates the relationship between human-bot attributes and the formation of collaboration patterns. In both types of cyclic patterns, task complexity strengthens the influence of human knowledge structures on the formation of collaboration patterns, while weakening the relation of bots' intelligence level or perception ability.

This study provides significant theoretical contributions and practical implications. Theoretically, this study explains the factors and mechanisms affecting collaboration patterns in knowledge construction scenarios. It enriches the research on human-bot collaboration mechanisms within OKCs from the perspective of empirical research. Furthermore, by investigating the interaction effects based on human-bot attributes, it enriches the study of collaboration patterns within OKCs from the perspective of human-bot complementary. It expands the application of theories related to human-bot complementary in the field of OKC human-bot collaboration research.

Practically, the study finds that the different attributes of humans and bots have a significant impact on the formation of collaboration patterns. These findings provide new management insights for human-bot knowledge construction on OKC. OKC can encourage users to update their knowledge structures through learning. This enables them to contribute more novel knowledge in the process of individual knowledge construction, thereby facilitating the generation of collective wisdom within the community. Besides, OKC can promote the development of more intelligent and perceptive bots. These bots can collaborate more effectively to complete knowledge construction tasks. Additionally, the study reveals a complementary relationship between human and bot attributes. It also finds that task complexity influences the impact of these attributes on human-bot collaboration patterns. Accordingly, measures can be developed to optimize the makeup of human-robot teams so that OKC can then recommend suitable tasks based on the distinct attributes of humans and bots.

Key Words Online Knowledge Community; Knowledge Society Construction; Human-Bot Collaboration Pattern; Human-Bot Interaction

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This study takes hospital caregivers as the research object, based on the perspective of ambivalent occupational identification, in order to reveal the complex occupational identity status of non-decent workers. We conduct multiple cross-regional field follow-up interviews with 50 caregivers and 14 related managers and, based on grounded theory, revealed that: (1) Caregivers will go through the three stages regarding of their occupational identification: "passive ambivalent occupational identification", "ambivalent occupational identification shock" and "active ambivalent occupational identification", and finally achieve an occupational cognition state of harmonious coexistence with contradictions; (2) In the passive stage, they will adopt the maladaptive strategy and show the tendency to escape and resist stigma, accept reluctantly and turnover; in the shock stage, they will take adaptive strategies (such as meaning construction, self-improvement and psychological resource construction) and maladaptive strategies (such as separation and being illegal) at the same time; and in the active stage, caregivers will conduct adaptive strategies such as acceptance, environment construction and role extension; (3) The main contradiction tension is from individual, organization and occupation, the latter two of which is hard to eliminate but could be moderated by resources they obtain from work such as job autonomy, respect from others and job meaning; (4) Hospitals, hometown circles and caregivers' personality traits are important sources of motivation for the evolution of ambivalent occupational identification stages. The humane management of the hospital and the support of the hometown circle facilitates a better adaptation of the caregiver to the job, while personality traits such as optimism and empathy help to reshape the understanding of the occupation. Our research reveals the dynamic evolution of caregivers' ambivalent occupation identification and provide implications for improving the management for the base labor groups. Theoretically, revealing the formation of ambivalent occupational identification of non-decent workers and their dynamic evolution process based on the paradoxical perspective can help to resolve the divergence of existing studies. Practically, it can provide inspiration for managers to improve the management of the underclass workgroups, so that the organizations can be more clear about what kind of institutional design can guide practitioners to construct a dignified occupational identity.

Key Words Non-decent Work; Occupational Stigma; Ambivalent Occupational Identification; Caregiver; Dynamic Evolutionary



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悖论视角下非体面工作感知对冲突体验 及矛盾职业认同的影响

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摘要: 基于悖论理论,通过分析 530 份医院护工数据,重点探讨了非体面工作感知与矛盾职业认同的关系及内在机制。研究表明:收入水平能够激发非体面工作从业者的家庭动机;非体面工作感知与家庭动机的交互作用对冲突体验有显著正向影响,而冲突体验会进一步诱发非体面工作从业者的矛盾职业认同;冲突体验在非体面工作感知与家庭动机的交互作用和矛盾职业认同的关系中发挥中介作用。

关键词: 非体面工作; 收入水平; 家庭动机; 冲突体验; 矛盾职业认同

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The Influence of Perceived Non-Decent Work on Experienced Conflict and Ambivalent Occupational Identification Based on Paradox Perspective

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Abstract: Based on paradox theory, this study explores the relationship between perceived non-decent work and ambivalent occupational identification using a sample from 530 hospital caregivers. The results show that income level can motivate caregivers' family motivation. The interaction between perceived non-decent work and family motivation has a significantly positive effect on experienced conflict, and experienced conflict further induces caregivers' ambivalent occupational identification. In addition, experienced conflict plays a mediating role in the relationship between the interaction of perceived non-decent work with family motivation and ambivalent occupational identification.

Key words: non-decent work; income level; family motivation; experienced conflict; ambivalent occupational identification

1 研究背景

非体面工作是指那些被社会所贬低或不喜欢,但对社会正常运转却必不可少的任务或职业,主要涉及身体、社交和道德等方面的脏污特质^[1]。例如,照料病人的医院护工、捍卫生命最后尊严的入殓师等。随着 ASHFORTH 等^[2]开拓性的文章发表之后,越来越多的学者开始关注非体面工作。国内关于非体面工作的研究近年也逐步兴起,但尚未形成完整的理论体

系^[3~6]。从现实情况而言,非体面工作具有十分重要的社会价值,但在劳动力市场一直处于边缘化地位,存在严重的供需失衡问题^[5]。以护工这一典型的非体面工作为例,根据国家卫生健康委员会医政医管局发布的有关数据显示,目前我国有超过 4 000 万失能、半失能老年人,按失能老人与护工 3 : 1 的国际配置标准推算,护工需求量超过千万,但现有养老护理从业人员仅 30 万,存在巨大的供给缺口。非体面工作脏污的工作环境和职业的污名压力所导致的身

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份认同威胁,是导致求职者抗拒、从业者离职的重要原因^[5,7]。由此,当一类职业对改善社会福利如此重要却存在巨大缺口时,如何引导和帮助从业者构建有尊严的职业身份成为亟待解决的问题。

职业是个体进行自我定义的关键要素,非体面工作对从业者身份认同影响一直是学界关注的热点问题^[2,7~9]。然而,现有研究关于非体面工作从业者职业认同或不认同存在长期争议,尚未达成一致结论^[5]。为了回应相关的研究争议,部分学者指出非体面工作从业者身份认同的过程较为复杂,使其很难处于有意识的认同或不认同选择的两端,对自身工作角色或多或少持有矛盾心理^[2,10,11]。矛盾职业认同是指从业者对自身职业兼具认同和不认同,或认同职业某一方面而不认同其他方面,反映了个体对自身职业的复杂情感^[12]。然而,已有关于非体面工作从业者矛盾职业认同的研究大都止步于理论探讨阶段,对矛盾职业认同的形成过程及作用机制尚不明晰。基于此,本研究旨在探讨非体面工作从业者矛盾职业认同如何形成及其隐性作用机理。总体而言,该问题的探讨具有较为重要的研究意义;理论上,能基于全新视角剖析非体面工作从业者复杂的职业认知;实践上,则有助于引导从业者构建有尊严的职业身份。

悖论与悖论理论提供了一个可用于探索相悖作用机制的独特视角^[13]。根据 SMITH 等^[14]的研究,悖论起源于相互依赖的要素间的持续性矛盾,并存在于从相反方向相互作用的要素形成的张力关系中。张力是对立要素冲突的结果,也是构成悖论理论的核心概念^[14]。本研究认为悖论理论可用于解析非体面工作感知与矛盾职业认同之间的关系。具体而言:一方面,由于职业污名的普遍存在,非体面工作从业者难以构建积极的自我意识并获得社会确认,致使他们存在较高的职业不认同^[8,9];另一方面,受制于自身条件的约束以及维持生计的需求,从业者不得不嵌入在非体面工作之中,他们通常很难不认同自身的工作^[15]。家庭动机是指个体为了家庭利益而付出努力的意愿^[16],高家庭动机的个体更希望从工作中获取资源来支持家庭。此外,高收入将激发从业者为家庭做贡献的意愿和动机,他们也更可能意识到自身工作的意义和价值^[17]。当非体面工作从业者面对高收入和家庭动机的刺激时,他们可能会产生冲突性的工作体验,进而陷入“难以认同又不得不

认同”的认同困境^[17]。鉴于此,本研究认为,在收入水平和家庭动机的共同作用下,非体面工作从业者可能会因身份张力而诱发冲突体验,而冲突体验将进一步导致从业者的矛盾职业认同。

综上所述,本研究拟基于悖论理论,从非体面工作从业者身份张力视角出发,探讨非体面工作感知与家庭动机的交互作用是否会诱发冲突体验,进而导致矛盾职业认同。本研究的结果有助于厘清非体面工作感知影响矛盾职业认同的内在机理,以期在弥补现有研究不足的基础上,为相关组织的管理者完善底层工作群体的管理实践提供有益指导。

2 理论基础和研究假设

2.1 悖论理论与非体面工作从业者矛盾职业认同

近年来学者开始关注悖论在非体面工作领域中的运用^[11,18]。根据悖论理论,悖论是相悖要素相互作用所导致的,其结果主要表现为张力^[14]。非体面工作从业者通常会面临显著的身份张力,与大多数人一样,他们也会将职业视为自身重要的身份标识,并渴望社会认可他们职业或工作的价值。然而,非体面工作及其从业者经常遭致社会污名,难以获得社会认可^[17]。

非体面工作从业者实际上是一类被“污名化”的职业群体,即社会将非体面工作“委托”给某些群体,但社会却对这些群体及其从业者“污名化”^[2,4]。职业污名压力使得非体面工作从业者难以构建积极自我意识并获得社会确认,因此,非体面工作感知可能会引发从业者的职业不认同,进而导致消极的工作结果(如离职倾向、退缩行为等)^[8,9]。然而,群体身份意识会使个体认识到自己属于特定的群体,同时也认识到因群体成员身份而带来的情感和价值^[18,19]。当从业者敏锐地意识到自身职业所遭受的污名,他们可能会更加努力寻找职业的积极意义和价值^[20]。由此,非体面工作从业者时常处于职业污名与职业价值之间的摇摆中^[17],他们的身份认同过程也较为复杂^[2]。相较于单一的职业认同或职业不认同,矛盾职业认同更能反映非体面工作从业者真实的职业认知状态^[10]。

2.2 收入水平对家庭动机的影响

在非体面工作情境中,大部分从业者受迫于家庭生计的压力和养家糊口的诉求,而不得不选择从事该类工作^[5],因此,收入是影响该群体从业者工作动机和职业选择的重要因素。鉴

于此:本研究首先探讨收入对非体面工作从业者家庭动机的激发作用;然后,在此基础上进一步探讨非体面工作感知与家庭动机的交互作用对冲突体验及矛盾职业认同的影响。

工作收入的增加是让家庭受益的重要方式^[16]。对于高家庭动机的个体而言,他们更有可能从工作中获取资源来支持他们的家庭^[15]。当个体面临迫切的家庭生计需求时,他们将专注于获得外部奖励,此时将触发可控形式的家庭动机^[15]。以护工群体为例,该群体大都会因此工作可以缓解家庭生计压力而选择长期从业。然而,不同收入水平的护工所呈现出的家庭动机存在较大差异。过低的工作收入并不足以给家庭提供额外经济支持,仅能维持自己生存需求,因此,低收入水平难以激发护工的家庭动机。相反,收入水平较高的护工可以有效缓解家庭经济压力,并给家庭提供有效的支持。此时,从业者更可能意识到自身工作对于家庭的意义和价值。

鉴于此,本研究推断高收入水平更可能激发个体的家庭动机。具体而言,当个体收入过低时,其很难通过自身工作缓解家庭经济压力,这可能会削弱个体的家庭动机。反之,当个体收入较高时,更可能激发其为家庭做贡献的动机。由此,提出以下假设:

假设1 非体面工作从业者收入水平与家庭动机正相关。

2.3 非体面工作感知与家庭动机的交互作用对冲突体验的影响

以往关于身份管理的研究表明,关注特殊组织或职业身份具有重要研究意义。例如,分析深陷危机的组织形象^[21],探讨存在身份认同危机的职业意识^[2,22]。由于人们通常会寻求从积极的角度看待自己^[2],因此,职业是个体构建积极自我和存在价值的核心要素^[23],而职业污名带来的身份认同威胁会引发一系列负面结果^[5,9]。鉴于非体面工作通常被认为是不好的或有违社会道德规范的,相关从业人员也被视为污名的化身,即被成为“非体面工作从业者”^[2]。由于污秽的工作条件与消极的社会评价阻碍了非体面工作从业者构建积极的自我意识,该群体普遍存在较高的职业不认同^[8,9]。由此,非体面工作从业者容易产生自我与职业分离的认知倾向。

值得注意的是,当进一步考察非体面工作从业者的工作动机后,从业者自我与职业的关系可能会发生变化^[24]。具体而言,本研究引入

家庭动机这一重要个体动机因素,考察非体面工作感知与家庭动机的交互作用对个体身份张力的影响。个体为家庭做贡献的意愿提供了一种强大的动力来源,可以提高员工的工作表现^[15]。本研究推断,尽管非体面工作从业者难以通过自身职业构建积极的自我概念,但高家庭动机个体可能将自身工作视为维持家庭生计必不可少的经济来源。此时,他们会努力从更加积极的角度看到自身所从事职业的意义和价值。例如,家政护理从业人员(如护工、住家保姆等)认为自身工作为家庭利益而做出“牺牲”,以突显自身的价值并塑造良好的职业形象^[25]。由此,对于高家庭动机的从业者而言,尽管工作的污名压力使其难以构建积极的职业身份认同,但他们能够通过自身努力工作缓解家庭经济压力,以彰显个体在家庭中的价值。此时,从业者可能会陷入进退两难的冲突境地,即职业污名压力使从业者难以认同自身职业,但为了维持家庭生计而不得不选择长期从业。换言之,当从业者的身份威胁与从业需求无法实现平衡协调便会产生身份张力,而这会进一步诱发个体的冲突体验。由此,提出以下假设:

假设2 非体面工作感知与家庭动机的交互作用对冲突体验有正向影响。

2.4 冲突体验与矛盾职业认同

相关研究表明,非体面工作从业者对职业身份或多或少持有矛盾的态度^[2,10]。矛盾职业认同反映了从业者对自身职业身份的复杂情感(如对职业的某些方面喜欢而对其他方面不满)。由此,冲突性或撕裂性的情况与矛盾认同密切相关^[26]。冲突体验是指职业身份与个体身份之间难以兼容的要求而产生的冲突性心理体验^[27],而身份张力是产生冲突体验的重要原因^[13]。本研究推断,当非体面工作从业者经历冲突体验后,会进一步产生矛盾职业认同。

就非体面工作从业者而言,他们常常同时呈现出认同和不认同的身份叙述。TYLER^[28]将非体面工作描述为“贱斥劳动”,即这类工作同时伴随着吸引力和排斥力。换言之,非体面工作从业者常常对其工作保持模棱两可的认同状态^[2,10]。以医院护工为例,脏污的工作环境和职业的污名压力阻碍了从业者构建积极的自我概念。但是当从业者从客观实践发现,受限于自身条件的约束和养家糊口的需要,他们不得不继续从事护理病人的工作。本研究认为,这些冲突体验会使从业者对自身职业产生矛盾心理。即护工可能会因工作环境的脏污和社会的

歧视而对自身职业产生厌恶心理,但他们也可能因家庭生活状况的改善而彰显了自身的价值和职业的意义。当个体的冲突体验越明显,他们越可能对自身职业产生矛盾情绪。类似地,相关研究也发现角色内冲突、职业工具性、身份不一致等具有冲突性质的变量都与矛盾认同密切相关^[12,26]。由此,提出以下假设:

假设 3 冲突体验对矛盾职业认同有正向影响。

2.5 有中介的调节模型

如前文所述,假设 2 提出非体面工作感知与家庭动机的交互作用对冲突体验有正向影响,假设 3 则提出冲突体验对矛盾职业认同有正向影响。基于此,本研究进一步推断冲突体验对非体面工作感知与家庭动机的交互作用与矛盾职业认同的关系存在中介效应。具体而言,当从业者家庭动机较高时,非体面工作感知会诱发冲突体验,并进一步产生矛盾职业认同。由此,提出以下假设:

假设 4 冲突体验在非体面工作感知与家庭动机的交互作用以及矛盾职业认同的关系中发挥中介作用。

综上所述,本研究的理论模型见图 1。

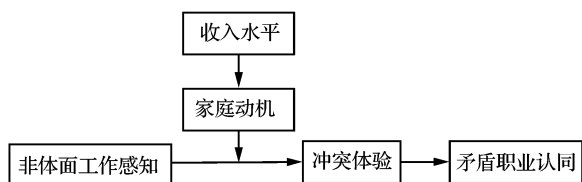


图 1 理论模型

3 研究设计

3.1 数据收集与样本描述

本研究以华南、华中及华北地区的在职医院护工为调查对象。在选择被试之前,课题组成员首先对华南地区多家医院的 50 余名护工进行访谈,以深入了解护工工作的实际情况。访谈中发现,护工普遍认为他们的工作并不很体面,社会大众会低看他们的职业。但部分资深护工也会主动表达对自身工作的态度和看法,并不忌讳讨论职业的不体面问题。大部分护工对自身工作持有一种模棱两可的态度,即尽管并未完全认同自身工作,但也认为护工工作有其意义和价值,为了生活也愿意长期从业。由此,本研究基于非体面工作情境,聚焦于从业者“矛盾职业认同”这一核心议题。

为了避免共同方法偏差的影响,本研究采用两阶段的“时滞”研究设计收集问卷调查

数据。调查问卷的发放与回收通过线上与线下相结合。问卷发放尽量利用护理公司人力资源培训、线上或线下集体会议的契机,由事先协调联系好的管理者向护工发放纸质问卷或电子问卷,每位受访者在填答完问卷后会获得 20 元的“红包”奖励。调研的实施过程分为以下两个阶段:①第一阶段,由被试人填写非体面工作感知、冲突体验、收入以及人口统计变量的调查问卷;②第二阶段,在第一阶段完成两周后开始,由课题组邀请上一阶段完成问卷填答的被试继续参与调研,此阶段问卷调查的变量包括家庭动机、矛盾职业认同。在剔除不满足配对要求或答案呈现明显规律的无效问卷后,共获得来自华南、华中和华北地区 8 家医院的 530 份多阶段匹配的有效问卷。在有效样本中:性别方面,以女性为主,占 94.91%;年龄方面,总体年龄偏大,以 40~60 岁为主,30 岁及以下占 0.19%、31~40 岁占 10.94%、41~50 岁占 49.25%、51~60 岁占 39.43%、61 岁及以上占 0.19%;学历方面,总体学历偏低,以中小学为主,小学及以下占 21.13%、初中占 70.00%、高中或中专占 8.68%、大专及以上占 0.19%;工作年限方面,总体上工作经验比较丰富,1 年以下占 6.60%、1~5 年占 38.87%、6~10 年占 31.70%、11~15 年占 14.34%、16 年及以上占 8.49%。

3.2 变量测量

本研究的所有测量量表均来源于国内外权威文献使用过的成熟量表,并通过采取严格的翻译-回译程序以保证所使用的量表在中国情境中的信效度。本研究中,所有量表均采用 Likert 5 点量表,1~5 表示从“完全不符合”到“完全符合”的感知分值。

① **非体面工作感知** 该变量的测量采用 LAI 等^[29]开发的量表。该量表具有良好的信效度,并得到相关研究的实证检验。原始量表涉及身体、社交和道德“肮脏”3 个维度,根据被试为医院护工的调研实际,本研究主要保留身体“肮脏”和社交“肮脏”两个维度,每个维度共 4 个题项,如“我的工作会接触一些脏的东西”等。本研究中,该量表的 Cronbach's α 值为 0.925。

② **家庭动机** 该变量的测量采用 MENGES 等^[16]开发的量表。该量表评估了被试为其家庭利益而工作的程度,共 5 个题项,如“养家糊口对我来说一件很重要的事情”等。本研究中,该量表的 Cronbach's α 值为 0.867。

③ **收入水平** 在衡量被试收入水平方

面,1=“4 000 元及以下”、2=“4 001~7 000 元”、3=“7 001~10 000 元”、4=“10 001 元及以上”。医院护工的收入相对偏低,4 000 元及以下占 37.55%、4 001~7 000 元占 52.08%、7 001~10 000 占 10.19%、10 001 元及以上占 0.19%。

(4) 冲突体验 该变量的测量采用 MI-RON-SPEKTOR 等^[27]开发的量表。该量表共 4 个题项,如“尽管不是很喜欢这份工作,但我不得不从事这份工作”等。本研究中,该量表的 Cronbach’s α 值为 0.853。

(5) 矛盾职业认同 该变量的测量采用 ASHFORTH 等^[12]开发的量表。该量表包括 3 个题项,如“我对护工这个职业有很复杂的感情”等。本研究中,该量表的 Cronbach’s α 值为 0.853。

(6) 控制变量 参照相关研究,本研究将被试的性别、年龄、学历、工作年限作为控制变量。对控制变量的编码如下:性别方面,1=男、2=女;年龄方面,1=“30 岁及以下”、2=“31~40 岁”、3=“41~50 岁”、4=“51~60 岁”、5=“60 岁及以上”;学历方面,1=小学及以下、2=初中、3=高中或中专、4=大专及以上;工作年限方面,1=“1 年以下”、2=“1~5 年”、3=“6~10 年”、4=“11~15 年”、5=“16 年及以上”。

4 实证分析与结果

4.1 验证性因子分析

区分效度是指不同的构念在实际测量中是否有明显的区分,本研究使用 Mplus 8.3 软件,通过验证性因子分析来检验非体面工作感知、家庭动机、冲突体验、矛盾职业认同这 4 个变量的区分效度(见表 1)。此外,本研究还采用误差相关法^[30],将非体面工作感知题项两两打包。由表 1 可知,相较于其他 3 个模型,四因子模型的拟合效果最好($\chi^2/df=2.284$ 、 $CFI=0.973$ 、

$TLI=0.967$ 、 $RMSEA=0.049$ 、 $SRMR=0.036$),说明研究模型具有良好的区分效度。

表 1 验证性因子分析($N=530$)

模型	χ^2	df	χ^2/df	CFI	TLI	RMSEA	SRMR
四因子模型 (A、B、C、D)	223.830	98	2.284	0.973	0.967	0.049	0.036
三因子模型 (A+B、C、D)	676.960	101	6.703	0.878	0.855	0.104	0.065
二因子模型 (A+B+C、D)	1 515.905	103	14.718	0.700	0.650	0.161	0.097
单因子模型 (A+B+C+D)	2 632.070	104	25.308	0.463	0.380	0.214	0.162

注:A 代表非体面工作感知,B 代表冲突体验,C 代表矛盾职业认同,D 代表家庭动机,+代表合并。

由于调查数据来源于同一被试,为了控制同源方差对数据质量的影响,本研究采用多阶段时间滞后的研究设计收集问卷数据,在一定程度上缓解了共同方法偏差。同时,本研究还通过 Harman 单因素因子分析法对数据进行同源方差检验。结果表明,未旋转时,共生成 4 个因子,解释了 69.34% 的变异,第一个因子解释了 36.17% 的方差变异,都在可接受的范围内^[31]。由此,可判断本研究的数据不存在严重的同源方差问题。

4.2 描述性统计及相关分析

本研究中,各变量的均值、标准差及相关系数矩阵见表 2。由表 2 可知,所有变量的相关系数均在合理范围之内,最大相关系数为 0.503,且 VIF 最大值为 1.297,可以初步判断变量不存在共线性的问题。由表 2 还可知,非体面工作感知与冲突体验($r=0.452$, $p<0.01$)、矛盾职业认同($r=0.408$, $p<0.01$)为显著正相关;冲突体验与矛盾职业认同为显著正相关($r=0.503$, $p<0.01$);家庭动机与冲突体验为显著正相关($r=0.156$, $p<0.01$);收入水平与家庭动机为显著正相关($r=0.019$, $p<0.05$)。上述结果为研究假设提供了初步支持。

表 2 各变量的均值、标准差及相关系数矩阵($N=530$)

变量	均值	标准差	1	2	3	4	5	6	7	8	9
1. 性别	1.949	0.220									
2. 年龄	3.277	0.665	-0.097*								
3. 学历	1.879	0.540	-0.020	-0.143**							
4. 工作年限	2.792	1.046	-0.005	0.227**	-0.188**						
5. 收入水平	1.730	0.643	-0.017	-0.019	0.048	0.158**					
6. 非体面工作感知	3.523	1.165	-0.010	-0.139**	0.101*	0.038	0.107*	0.925			
7. 家庭动机	4.396	0.518	-0.005	-0.070	0.004	0.016	0.091*	0.145**	0.867		
8. 冲突体验	3.927	1.064	0.018	-0.144**	0.096*	-0.017	0.142**	0.452**	0.156**	0.853	
9. 矛盾职业认同	3.708	1.215	0.027	-0.207**	0.134**	0.105*	0.251**	0.408**	0.249**	0.503**	0.853

注:*,** 分别表示 $p<0.05$ 、 $p<0.01$;对角线数值为内部一致性信度系数。下同。

4.3 假设检验

本研究主要借鉴 PODSAKOFF 等^[32]提出的方法检验研究假设:①采用 OLS 回归分析的方法检验收入对家庭动机的影响,并检验感知非体面工作和家庭动机交互作用对冲突体验的影响,即检验假设 1 和假设 2;②检验冲突体验对矛盾职业认同的影响,即检验假设 3;③采用蒙特卡洛的方法检验自变量和调节变量交互作用是否通过中介变量对结果变量产生影响,即检验假设 4。

首先,本研究采用 OLS 回归分析的方法检验收入对家庭动机的影响(见表 3)。表 3 中,由模型 2 可知,收入对家庭动机交乘项有显著正向影响($\beta=0.070, p<0.05$)。由此,假设 1 得到支持。然后,进一步采用 OLS 回归分析的方法检验非体面工作感知与家庭动机交互作用对冲突体验的影响(见表 4)。表 4 中,由模型 4 可知,非体面工作感知与家庭动机的交乘项对冲突体验有显著的正向影响($\beta=0.228, p<$

0.01)。为更直观呈现家庭动机的调节效应,本研究还绘制了家庭动机对非体面工作感知与冲突体验关系的调节效应图(见图 2)。由图 2 可知,在家庭动机更高的情况下,非体面工作感知与冲突体验呈显著的正向关系($\beta=0.498, t=9.929, p<0.001$);当家庭动机更低的情况下,非体面工作感知与冲突体验的正向关系更弱($\beta=0.263, t=5.146, p<0.001$)。由此,假设 2 得到支持。

表 3 收入水平对家庭动机的回归结果(N=530)

类别	家庭动机	
	模型 1	模型 2
性别	-0.030(0.103)	-0.026(0.103)
年龄	-0.062(0.035)	-0.058(0.035)
学历	-0.002(0.043)	-0.008(0.043)
工作年限	0.017(0.022)	0.009(0.023)
收入水平		0.070*(0.036)
F	0.813	1.430
R ²	0.006	0.013

表 4 非体面工作感知与家庭动机交互作用、收入水平对冲突体验的回归结果(N=530)

类别	冲突体验			
	模型 1	模型 2	模型 3	模型 4
性别	0.033(0.209)	0.080(0.188)	0.051(0.186)	0.059(0.185)
年龄	-0.222** (0.071)	-0.118(0.065)	-0.115(0.064)	-0.110(0.064)
学历	0.161(0.087)	0.078(0.079)	0.078(0.077)	0.067(0.077)
工作年限	0.030(0.046)	-0.009(0.041)	-0.015(0.041)	-0.029(0.041)
非体面工作感知		0.400*** (0.036)	0.386*** (0.036)	0.380*** (0.036)
家庭动机			0.237** (0.081)	0.222** (0.081)
非体面工作感知×家庭动机			0.240*** (0.069)	0.228** (0.069)
收入水平				0.134* (0.065)
F	3.711**	28.403***	23.370***	21.110***
R ²	0.027	0.213	0.239	0.245

注:***表示 $p<0.001$,下同。

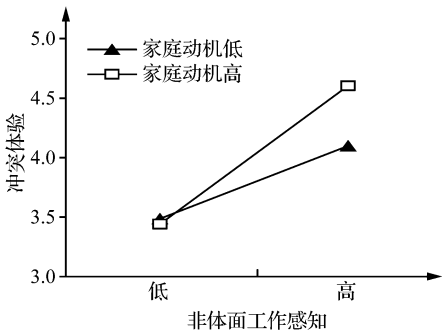


图 2 家庭动机对非体面工作感知与冲突体验关系的调节效应

本研究中,家庭动机通过冲突体验为中介对非体面工作感知与矛盾职业认同的调节作用检验见表 5。表 5 中,由模型 4 可知,冲突体验

对矛盾职业认同有显著的正向影响($\beta=0.414, p<0.001$)。由此,假设 3 得到支持。蒙特卡洛分析结果显示:在家庭动机高的情况下,非体面工作感知通过冲突体验对矛盾职业认同的间接效应显著(估计值 = 0.210, 95% 置信区间 [0.149, 0.275]);在家庭动机低的情况下,非体面工作感知通过冲突体验对矛盾职业认同的间接效应显著(估计值 = 0.111, 95% 置信区间 [0.062, 0.167])。这两组间接效应差值显著($\Delta b=0.117, 95\%$ 置信区间 [0.048, 0.191])。有中介的调节效应显著(系数 = 0.096, 95% 置信区间 [0.037, 0.160]),而非体面工作感知与家庭动机的交乘项对矛盾认同影响并不显著。由此,假设 4 得到部分支持。

表 5 家庭动机通过冲突体验为中介对非体面工作感知与矛盾职业认同调节作用(N=530)

类别	矛盾职业认同			
	模型 1	模型 2	模型 3	模型 4
性别	0.045(0.232)	0.090 (0.215)	0.118(0.207)	0.094(0.192)
年龄	-0.417 *** (0.079)	-0.318 *** (0.074)	-0.286 *** (0.071)	-0.241 *** (0.067)
学历	0.306 ** (0.096)	0.227 * (0.090)	0.207 * (0.086)	0.176 * (0.080)
工作年限	0.212 *** (0.050)	0.174 *** (0.047)	0.134 ** (0.046)	0.146 *** (0.043)
非体面工作感知		0.384 *** (0.041)	0.343 *** (0.040)	0.186 *** (0.041)
家庭动机			0.403 *** (0.090)	0.311 *** (0.085)
非体面工作感知×家庭动机			-0.013(0.077)	-0.107 (0.073)
收入水平			0.331 *** (0.072)	0.276 *** (0.068)
冲突体验				0.414 *** (0.045)
F	12.203 ***	28.854 ***	25.155 ***	35.090 ***
R ²	0.085	0.216	0.279	0.378

5 结论与讨论

本研究主要得到以下结论:①由于大部分非体面工作从业者存在家庭生计的压力和养家糊口的诉求,因而收入水平能有效激发他们的家庭动机;②家庭动机作为个体职业选择重要依据,会进一步影响个体的工作体验。由此,非体面工作从业者的非体面工作感知与家庭动机的交互作用对冲突体验有显著正向影响,且冲突体验会进一步诱发矛盾职业认同;③冲突体验在非体面工作感知与家庭动机的交互作用和矛盾职业认同的关系中发挥中介作用。上述研究发现为理解非体面工作从业者矛盾职业认同提供了新的理论视角。

本研究的理论贡献主要在于:①以往关于非体面工作从业者职业身份的研究大都基于“非此即彼”的思维,得出从业者要么职业不认同要么职业认同的研究结论^[8,9]。本研究提出了非体面工作从业者矛盾职业认同的新视角,这为剖析非体面工作从业者复杂职业认知状态提供新的思路。非体面工作从业者的身份认同过程较为复杂,很难处于有意识的认同或不认同选择的两端,他们对职业身份或多或少持有矛盾的态度^[2,10]。相较于单一的职业认同或职业不认同,矛盾职业认同更能反映非体面工作从业者真实的职业认知状态^[2]。本研究重点探讨了非体面工作从业者矛盾职业的形成机制,并响应了相关文献的倡导^[2,10],为理解非体面工作感知对从业者矛盾职业认同的影响提供了更多的经验证据。②以往研究大都基于负面心理机制(如低自尊、相对剥夺感、牵连家人污名等)^[3,4],探讨非体面工作感知对个体身心福祉和绩效表现的负面影响。本研究基于悖论理论及其身份张力视角,探讨了非体面工作感知对从业者矛盾职业认同的影响机理。在家庭动机

和职业污名压力的双重影响下,非体面工作从业者往往会陷入一种“难以认同又不得不认同”的身份张力之中,这种身份张力将诱发护工冲突体验并最终导致矛盾职业认同。KREINER等^[10]通过整合社会身份认同和制度正当化两个冲突性的理论视角,提出了非体面工作从业者矛盾职业的理论命题。本研究发现,非体面工作感知经由冲突体验这一路径影响从业者矛盾职业认同的作用机制,这进一步丰富了非体面工作与矛盾职业认同之间的理论研究框架,也为非体面工作从业者矛盾职业认同提供了实证支持。③家庭动机作为个体职业选择的重要依据,会对个体工作体验和工作结果产生重要影响^[15]。本研究通过引入家庭动机这一重要边界条件,以及收入水平对家庭动机的激发作用,揭示了非体面工作感知与非体面工作从业者冲突体验之间关系的发生条件。非体面工作感知与家庭动机的交互作用会诱发该类人群的冲突体验,并最终导致从业者矛盾职业认同。本研究基于家庭动机这一视角,剖析了引致非体面工作从业者身份张力的隐性机理。此外,少数研究发现经济或生计压力是个体家庭动机重要影响^[15,16],大部分非体面工作从业者都存在强烈的养家糊口诉求和家庭生计压力。为此,本研究进一步明晰了收入水平对非体面工作从业者家庭动机的影响效果,揭示了收入报酬对底层工作群体工作动机以及身份认同过程的影响。

本研究的实践启示主要在于:非体面工作对于社会正常运转发挥着重要作用,但由于其工作特殊性使从业者感到低社会地位和污名压力,从而导致冲突性工作体验和矛盾职业认同,并引发了一系列身心健康问题^[5]。由此,探讨如何削弱从业者在工作过程中的非体面工作感知及其负面影响至关重要。鉴于此,首先,管理者可以制定适当的组织干预策略,以帮助非体

面工作从业者更好地应对污名压力,引导其构建有意义的职业身份。例如,定期对相关从业者进行培训,并积极传递职业的社会价值。管理者还可以通过有效的沟通交流来帮助从业者理解工作的意义和价值。这既可以提高他们的工作技能,也能让非体面工作从业者以更加积极地眼光看待自身的工作角色,并采取积极的污名应对策略。其次,本研究发现收入水平能够有效激发非体面工作从业者的家庭动机,且大部分此类群体都有强烈的养家糊口诉求。高家庭动机的从业者更可能努力工作,甚至将从事非体面工作视为承担家庭责任的重要表现,以突显工作对于自身家庭的意义。由此,组织应该提高非体面工作从业者的福利待遇与工资保障,签订稳定的劳动合同,促使他们更加认可其工作岗位,愿意长期留在组织中工作。最后,非体面工作感知与家庭动机的交互作用对医院护工的冲突有正向影响,并进一步导致从业者的矛盾职业认同。除了基于从业者个人或群体视角寻找应对工作污名的方法,还需重视构建非体面工作从业者的社会支持资源,尤其是来自家庭的关怀和支持。为此,本研究建议加强来自从业者家庭或亲友的关怀和疏导。一方面,可以缓解职业污名对从业者身心的危害;另一方面,可以激发从业者的家庭动机,使其更能认识自身工作之于家庭贡献的意义。从社会层面而言,还应加强职业平等宣传,树立“劳动无高低贵贱之分”的价值理念,这有利于从根本上降低职业污名的负面影响。

6 研究局限与展望

本研究也存在以下不足:①受访者以医院一线护工为主,学历水平普遍较低。他们受限于自身条件约束与生计压力,不得不从事护理病人的非体面工作。这为本研究探讨非体面工作从业者矛盾职业认同提供了良好的研究对象。然而,许多高声望职业群体也可能存在污名化的问题,他们对自身职业的态度和看法也值得关注。由此,未来研究可补充其他非体面工作从业者的数据样本,以验证本研究结论在其他情境中的适用性。②尽管采取了时间滞后的研究设计,在一定程度上降低共同方法偏差的问题,但由于本研究的相关变量测量采用被试自陈的方式,仍可能造成共同方法偏差问题。虽然数据分析结果表明,本研究的共同方法偏差问题并不严重,不会对相关检验结果造成较大影响,但未来研究中,还可以考虑通过实验法

或延长变量测量时间间隔的方法,以更加全面、准确地估计变量间的因果关系。③虽然重点探讨了外部收入水平和个体工作动机在非体面工作对从业者身份认同影响关系中发挥的作用。然而,相关研究发现组织支持、团队导向领导等组织因素也会削弱非体面工作感知的负面影响。未来研究中可将相关变量也纳入到分析框架之中。

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主动抑或回避? 多重支持资源对非体面工作感知与矛盾职业认同的影响机制研究

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摘 要: 基于压力转换理论, 文章考察多重支持资源(组织支持、老乡支持、家庭支持)对非体面工作感知与矛盾职业认同的调节机制, 以及污名应对策略对调节机制的中介作用。通过对530份医院护工问卷分析发现, 多重支持资源对非体面工作感知与矛盾职业认同的关系都具有调节作用, 即当护工组织支持、老乡支持、家庭支持较高时, 非体面工作感知与矛盾职业认同的正向关系更弱。污名应对策略中介了组织支持对非体面工作感知与矛盾职业认同关系的调节作用。研究发现在理论上深化对非体面工作从业者矛盾职业认同干预策略的认识, 实践上也能管理者完善底层工作群体管理提供启发。

关键词: 非体面工作感知; 矛盾职业认同; 多重支持资源; 污名应对策略

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Initiative or Avoidance? The Effect of Multiple Supporting Resources on the Relationship between Perceived Non-Decent Work and Ambivalent Occupational Identification

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Abstract: Based on the transactional model of stress, we examined the moderating roles of multiple supporting resources (organizational support, fellow-townsmen support, and family support) and two categories of occupational stigma coping strategies on the perceived non-decent work and ambivalent occupational identification. Data are collected from 530 hospital caregivers. Results show that: multiple supporting resources moderate the relationship between perceived non-decent work and ambivalent occupational identification, and the relationship between perceived non-decent work and ambivalent occupational identification will be weaker when caregivers perceive high levels of organizational, fellow-townsmen, and family supports. The mediated moderation analyses revealed that organizational support was positively associated with initiative coping strategies and negatively associated with avoidance coping strategies.

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egies. Stigma coping strategies mediated the moderating effect of organizational support on the relationship between perceived non-decent work and ambivalent occupational identification. The above research results deepen the theoretical understanding of the intervention strategies for ambivalent occupational identification of non-decent workers, and provide practical inspiration for managers to improve the management of the bottom working group.

Key words: perceived non-decent work; ambivalent occupational identification; multiple supporting resources; stigma coping strategies

一、引言

职业是社会分工的产物,凡是有益于人类社会的职业应无高低贵贱之分^[1]。然而,在长期的社会实践中,部分职业因其脏污属性而被公众“污名化”,在劳动力市场一直处于边缘化地位^[2]。中国人习惯将其同个人的“面子”结合起来^[3],因为能否从事一份体面的工作关乎从业者及其家人的脸面^[4-5]。非体面工作(又称“肮脏”工作)是指那些维持社会正常运转所必需的,但被社会公众所贬低或不喜欢的职业,涉及身体(physical)、社交(social)、道德(moral)或情绪(emotional)等层面的脏污特质^[6]。本文所关注的护工群体,主要涉及身体和社交两个层面的脏污^[7]。其中,身体肮脏是护工在护理病患时接触体液、排泄物或带菌环境等,由于护工的工作环境相对肮脏,从而在生理上产生不舒适感。社交肮脏则主要源于护工在工作过程中容易与雇主形成主仆关系,如遭致病人或家属的责骂、刁难时,护工只能选择忍气吞声。在非体面工作情景中,从业者常常因社会偏见而面临严重的身份威胁,这不仅会影响他们的身心健康,还可能导致组织低效运行^[2,8]。职业是个体进行自我定义和存在价值感的核心要素^[9-11],探讨非体面工作感知对从业者职业身份认同的影响,具有重要的学术价值和现实意义。

非体面工作从业者身份认同过程较为复杂,很难处于有意识的认同或不认同选择的两端,对自身工作角色或多或少持有矛盾心理^[8,12-13]。矛盾职业认同是指从业者对自身职业兼具认同和不认同,或者认同职业的某方面而不认同其他方面^[14]。Ashforth 和 Kreiner^[8]认为职业污名致使从业者面临着严重的身份认同威胁,但工作的肮脏污名也有助于形成“强”的职业或群体文化,这会刺激从业者采取职业意识形态(occupational ideologies)和社会权重(social weighting)等主动型的污名应对策略,在这两种对立力量的共同作用下致使从业者产生矛盾职业认同。Tallberg 和 Jordan^[15]基于民族志的研究方法,探讨了动物收容所工作人员所面临的身份张力,他们在动物照料与动物杀戮之间时常持有矛盾心理。王红丽等^[16]认为,受制于自身家庭动机或外部有限工作机会,职业污名压力会诱发非体面工作从业者的冲突体验,并进一步导致矛盾职业认同。然而,对于非体面工作感知与矛盾职业认同的关系研究,尚未得出一致结论^[17-19]。例如,Lai 等^[10]的研究结果表明,非体面工作的污名压力使得从业者面临严重的身份失调,导致从业者存在普遍的职业不认同。Deery 等^[11]通过混合研究方法则发现,通过构建社交关系、工作自主性、工作意义感等机制,非体面工作从业者也能保持较高的职业认同。现有关于非体面工作感知与矛盾职业认同关系研究所得出的不同结论不仅阻碍了相关理论的发展,也使得实务界无法采取有效的管理措施来建立污名压力的预防与治理机制。基于此,本文将重点探索非体面工作感知与矛盾职业认同关系中的调节因素,以进一步厘清其影响的边界条件。

为了回应这个问题,本文主要关注多重支持资源及两类污名应对策略(积极应对和回避应对)在非体面工作感知与矛盾职业认同关系中的作用。由于非体面工作从业者通常难以获得外界的支持和理解,他们能否有效应对污名压力关键在于是否拥有丰裕的压力应对资源^[6,20]。以往研究大都基于从业者自身的视角,探讨非体面工作对从业者身份认同的影响以及他们采取的污名应对策略^[21-22]。实际上,组织管理者和外部社会也会影响非体面工作从业者的污名应对方式^[6]。其中,组织支持作为一种重要的工作资源,不仅会影响从业者污名应对策略的选择^[23-24],也可以有效地缓解污名压力对从业者的负面影响^[10,25]。此外,护工群体大都以老乡圈子为工作纽带,老乡支持作为一种特殊的关系资源,可以帮助护工更好地适应工作^[26-27]。而家庭支持作为一种重要的情感资源,是护工得以长期安心工作的精神支柱^[28-29]。本文将组织

支持、老乡支持及家庭支持视为护工最重要的支持性资源,并探讨其在护工应对污名压力过程中所发挥的作用。此外,根据压力转换理论,个体拥有的资源会影响其应对策略的选择^[30-31],而不同应对策略将进一步影响个体对压力源认知和行为反应^[32-33]。因此,在多重支持资源调节非体面工作感知与矛盾职业认同关系的过程中,污名应对策略可能是一种重要的中介机制,其中的作用机理也是本文关注的重点问题。基于此,本文不仅将深入考察多重支持资源对非体面工作感知和矛盾职业认同关系的调节作用,还将构建被中介的调节效应模型(mediated-moderation model)^[34],分析多重支持资源的调节作用是否通过污名应对策略而实现。

有鉴于此,本文的主要贡献包括:第一,通过引入多重支持资源作为调节变量,有助于厘清非体面工作感知对矛盾职业认同的作用边界。第二,通过考察两种污名应对策略在非体面工作感知与矛盾职业认同关系中的调节作用,可以比较不同污名应对策略的有效性,有助于推进现有理论的发展及指导管理实践。第三,深入探讨多重支持资源如何通过污名应对策略对从业者在非体面工作压力情境下的职业认知反应产生影响,有利于进一步揭示多重支持资源调节作用的发生机制。

二、理论背景与研究假设

(一) 非体面工作感知与矛盾职业认同

压力源是指“唤起压力应激过程的刺激物”^[35],而工作压力源容易导致员工生理或心理发生变化,进而出现功能偏差的状态^[36-37]。根据压力转换理论,在压力情景中,个体会对压力源进行初级评价(primary appraisal),即评估压力源与自身的相关和威胁程度,并引发一系列的心理和行为反应^[31]。对于非体面工作从业者而言,职业污名所引致的非体面工作感知是一种显著的工作压力源,会对从业者的身份认同产生重要的影响。

非体面工作从业者常常对他们的职业保持一种模棱两可的认同状态,身份认同的这种模糊机制称为矛盾职业认同^[8,13]。主要可能来自两方面的原因:一方面,职业的污名压力使得非体面工作从业者很难在工作领域构建积极的自我概念^[8],严重的身份认同威胁阻碍了从业者职业认同的形成^[10,38];另一方面,非体面工作从业者通常很难不认同自身的职业,因为迫于生计压力使他们不得不选择长期从业,而不认同或远离工作中的自我容易产生认知失调^[39]。因此,非体面工作从业者常常陷入“难以认同又不得不认同”的两难境地。不仅如此,当个体具有强烈的内在工作动机时(如家庭动机、工作使命感等),非体面工作感知可能会诱发从业者的冲突体验,并进一步导致矛盾职业认同^[16]。基于此,本文提出以下假设:

H1:非体面工作感知正向影响矛盾职业认同。

(二) 多重支持资源的调节作用

压力转换理论认为,对刺激物的心理评估决定了压力源的严重程度,而这种认知评价及其后果会受到个体应对资源的影响^[31]。相关研究表明,积极的组织因素会改变从业者对自身职业的认知,将注意力聚焦于工作的积极方面,削弱非体面工作感知与矛盾职业认同之间的关系^[40-41]。这些因素通常称为压力修正因素或压力缓冲变量。此外,根据资源保存理论,个体具有保存、保护以及获取资源的倾向。在压力情境中,个体会积极获取新资源以应对可能出现的资源损失情景^[42]。对于非体面工作从业者而言,尽管他们难以获得社会的支持和理解^[43],但可以通过多重支持资源的构建来应对污名压力^[20]。本文认为,组织支持、老乡支持、家庭支持是护工重要的支持性资源,将在非体面工作感知影响矛盾职业认同过程中起缓冲作用。

首先,就组织支持而言,组织支持意味着组织能赋予从业者更多的资源支持^[44],这让他们能够更加从容地应对外界对自身职业的歧视^[45]。此外,组织支持会提升工作中的自我形象,并增强情感和认同导向的组织承诺^[46]。当组织形成相互支持的组织文化或领导鼓励员工关注群体互动和群体目标时,会提高员工群体凝聚力和群体意识^[47]。这有助于从业者对工作角色形成积极的感知,并最终塑造有意义的职业身份^[40]。因此,在高组织支持的环境中,护工可能仅仅将职业污名视为社会的偏见而非对自我形象的威胁。

相关实证研究也发现,组织支持作为一种重要的工作资源,可以有效缓解污名压力对从业者的负面影响^[6,10,25]。相反,对于低组织支持而言,从业者难以改变不利环境或应对工作压力,容易对自身职业形成消极的认知,进而加剧他们的矛盾职业认同^[43]。

其次,就老乡支持而言,老乡圈子作为中国情景的特殊产物,在从业者压力应对、工作适应以及身份管理等方面发挥着重要作用^[26-27]。以医院护工为例,他们大都以老乡圈子为纽带,老乡支持作为一种特殊的情感和关系资源,可以帮助护工更好地适应工作,且能更积极地应对污名压力。换言之,当护工遭遇外界的偏见和歧视时,老乡能在工作中互相帮助,生活上互相照应。因此,老乡支持有助于增强内部凝聚力,以更加积极的眼光看待自身职业,进而缓解非体面工作感知对矛盾职业认同的影响。

最后,就家庭支持而言,家庭是影响个体工作动机的重要因素^[28,48],尤其在中国文化背景下,家庭对于个体有着突出的意义^[49-50]。大部分护工都是背井离乡,由农村进入城市从事护理工作。因此,家庭支持作为一种重要的情感资源^[29],是护工得以长期安心工作的精神支柱。当护工在工作过程中遭遇不顺心的事情时,他们往往会向家人倾诉和寻求安慰。对于低家庭支持而言,从业者既无法获得社会的理解,又不能获得家庭亲人的支持,这将进一步加剧从业者对自身职业的负面认知,进而强化非体面工作感知与矛盾职业认同之间的关系。

综上,本文推断当护工组织支持、老乡支持、家庭支持较高时,不仅可以提升护工的污名压力应对能力,还可能改变他们对自身职业的负面认知,甚至重塑工作的意义和价值,并进一步弱化自身的矛盾心理。换言之,多重支持资源将削弱非体面工作感知对护工矛盾职业认同的影响。基于此,本文提出以下假设:

H2a:组织支持调节了非体面工作感知与矛盾职业认同之间关系。当护工感知高组织支持时,非体面工作感知与矛盾职业认同之间的正向关系减弱。

H2b:老乡支持调节了非体面工作感知与矛盾职业认同之间关系。当护工感知高老乡支持时,非体面工作感知与矛盾职业认同之间的正向关系减弱。

H2c:家庭支持调节了非体面工作感知与矛盾职业认同之间关系。当护工感知高家庭支持时,非体面工作感知与矛盾职业认同之间的正向关系减弱。

(三) 污名应对策略的作用机制

根据压力转换理论,个体对压力源进行初级评价后,将进入次级评价(secondary appraisal),即评估自身的压力应对资源,并决定采取何种压力应对策略降低压力源的负面影响^[31]。下文主要关注次级评价阶段,包括多重支持资源(组织支持、老乡支持、家庭支持)对污名应对策略的直接影响、污名应对策略在非体面工作感知与矛盾职业认同中的调节作用、多重支持资源通过污名应对策略对非体面工作感知与矛盾职业认同产生间接调节作用。

1. 多重支持资源与污名应对策略。职业污名所引发的非体面工作感知是一种典型的工作压力源,对从业者身心健康和绩效表现会产生重要的影响。那么从业者将采取何种应对策略来处理非体面工作的污名压力?应对是指“在压力情景下个体对环境的反应和处理方式”^[51]。尽管存在多种应对策略的分类方式^[52],但积极应对策略和消极应对策略最能反映其本质区别^[32,51]。积极应对策略是指个体采取问题解决的积极方式消除压力环境^[31],而消极应对策略则指个体采取假想情况得到解决等消极方式回避压力源^[52]。在非体面工作情境中,也有学者将污名应对策略划分为主动应对和回避应对两种类型^[53-54]。应对策略是基于一定压力情景产生,并反映个体对压力的反应程度^[31]。根据资源保存理论,资源是个体衡量和评估压力的关键组成部分,资源决定了个体如何应对压力情景^[42]。换言之,护工所具备的支持资源可能会影响其对污名应对策略的选择。

具体而言,在非体面工作情景中,从业者的压力应对资源主要涉及工作、关系、情感等资源^[6]。组织支持是影响从业者如何应对污名压力的重要因素^[23],当组织赋予个体更多的资源和情感支持时,即使遇到挫折、压力等消极事件,从业者也可能倾向于进行积极的解读,并采取主动型污名应对策略^[6]。此外,部分特殊的关系网络也有助于从业者更好地适应工作,如熟知他们工作的家庭成员、维系情感纽带的老乡圈子

等。在中国文化背景下,这些“内部人”对于个体有着突出的意义^[49-50]。换言之,老乡支持、家庭支持这些特殊的支持性资源对护工污名应对策略的选择亦具有重要影响。

在高支持性的环境中,意味着护工能从组织中获得较多的资源支持,也能从老乡圈子和家庭中获得更多的情感支持。丰富的支持资源有助于护工保持乐观的心态,降低污名压力对自身的负面影响^[10,55]。此时,护工可能从积极的角度看待自身工作,重塑工作的意义和价值,并倾向采取积极主动的污名应对策略^[6]。再者,积极组织氛围有助于护工形成高凝聚力的职业群体^[56]。当护工难以获得外界的支持和理解时,也可以借用这种集体资源来宣泄情绪,并形成“社会缓冲带”,这有助于他们采取主动型污名应对策略,减少对污名压力的消极应对^[22]。在低支持性的环境中,护工常常需要独自面对工作压力。他们难以获得社会外界的支持和理解,也难以获得组织、老乡及家庭的资源和情感支持。此时,护工往往只能采取污名内化、外群体偏好等消极回避的方式应对污名压力^[21,54]。基于此,本文提出以下研究假设:

H3a:组织支持与主动型污名应对策略正相关,与回避型污名应对策略负相关。

H3b:老乡支持与主动型污名应对策略正相关,与回避型污名应对策略负相关。

H3c:家庭支持与主动型污名应对策略正相关,与回避型污名应对策略负相关。

2. 污名应对策略的调节作用。前文集中讨论了多重支持资源(组织支持、老乡支持、家庭支持)如何影响护工污名应对策略的选择,当护工采取不同的污名应对策略,会进一步改变压力源与从业者认知反应之间的关系^[30,33]。本文推断,非体面工作感知与矛盾职业认同之间关系也会受到护工污名应对策略的影响。

主动型污名应对策略指从业者采取有效的方式应对不利的环境,主要包括赋予职业积极的意义、内群体偏好等方式^[53]。在污名压力的影响下,采取主动型污名应对策略的从业者将积极调节自身行为与认知反应^[6]。具体而言,赋予职业积极的意义有助于护工转变观念,认识到自身职业对于个人和社会的价值(例如,从事护工工作缓解了家庭经济压力、帮助病患恢复健康等),这可以降低非体面工作感知对自我评价的贬损^[57-58]。此外,内群体偏好意味着护工更愿意用群体身份来进行自我定义,他们对所属职业群体会形成更加积极的认知。借助这种内群体身份,可以提高群体凝聚力,帮助护工更好应对工作的污名压力^[21]。相关的实证研究也发现,主动型污名应对策略可以削弱非体面工作对从业者自我认知的负面影响^[54]。综上所述,采取主动型职业污名应对策略,意味着护工可能重塑工作的意义和价值,减少对自身职业的负面认知,将削弱非体面工作感知对矛盾职业认同的正面影响。基于此,本文提出以下假设:

H4a:主动型污名应对策略在非体面工作感知与矛盾职业认同中起调节作用。当从业者采取主动型污名应对策略时,非体面工作感知与矛盾职业认同的正向关系减弱。

回避型污名应对策略指个体采用心理或情感上逃避的方式应对污名压力,主要包括污名内化和外群体偏好等方式^[53]。本文认为采取回避型污名应对策略可能会强化非体面工作感知对矛盾职业认同的正向影响。资源保存理论认为,采用回避型应对策略的个体在压力面前处于弱势的地位^[59]。因为消极回避应对需要个体持续投入资源,有限资源的消耗会削弱个体的自我调节能力,并加剧压力源对个体的负面影响。具体而言,污名内化指被污名者认同自身或群体被施加的污名,污名内化是从业者无力反抗的被迫选择^[22]。非体面工作本质上是一种社会建构,在一定社会环境较为稳定,护工可能会合理化污名来为自己的无力反抗进行辩解^[13]。另外,有关群际关系的研究表明,“污名化”群体由于对内群体的评价相对较低,因此对内群体会产生排斥感,这会进一步强化自身职业的负面认知^[60]。在非体面工作的情境中,外群体偏好意味着从业者对外界偏见的默许^[61]。此时,他们会试图离开现属群体并加入更有利的群体,这将进一步强化护工的矛盾心理。综上所述,采取回避型的污名应对策略,意味着护工可能强化或接受社会的偏见,增加对职业的负面认知,将强化非体面工作感知对矛盾职业认同的正面影响。基于此,本文提出以下假设:

H4b:回避型污名应对策略在非体面工作感知与矛盾职业认同中起调节作用。当从业者采取回避型污名应对策略时,非体面工作感知与矛盾职业认同的正向关系增强。

3. 被中介的调节作用。Grant 和 Berry^[34]认为,被中介的调节模型包含以下几个要素:第一,调节变量影响了自变量和因变量的关系;第二,调节变量直接作用于中介变量;第三,中介变量同样对自变量和因变量的关系具有调节作用。根据压力转换理论,在个体对压力源的影响进行初级评价后,将进入次级评价阶

段,即个体评估应采取何种应对策略以消除或降低压力源的负面效应,个体支持资源将对这一评估过程产生重要影响^[31]。上述的讨论表明,非体面工作感知可能会导致护工形成矛盾职业认同,而这一关系会受到多重支持资源(组织支持、老乡支持、家庭支持)的影响。此外,本文还探讨了多重支持资源如何通过污名应对策略产生间接调节作用。这一间接调节作用包括:第一,多重支持资源与主动型污名应对策略正相关,与回避型污名应对策略负相关;第二,污名应对策略调节了非体面工作感知与矛盾职业认同之间的关系,即主动型污名应对策略削弱非体面工作感知与矛盾职业认同之间的正向关系,而回避型污名应对策略则强化非体面工作感知与矛盾职业认同之间的正向关系。结合前文的逻辑推导及假设,本文推断,主动型污名应对策略和回避型污名应对策略中介了多重支持资源对非体面工作感知与矛盾职业认同的调节效应。基于此,本文提出以下假设:

H5:主动型或回避型污名应对策略中介了组织支持(H5a)、老乡支持(H5b)、家庭支持(H5c)对非体面工作感知与矛盾职业认同的调节作用。

基于上述分析,本文构建如图1所示的研究模型。

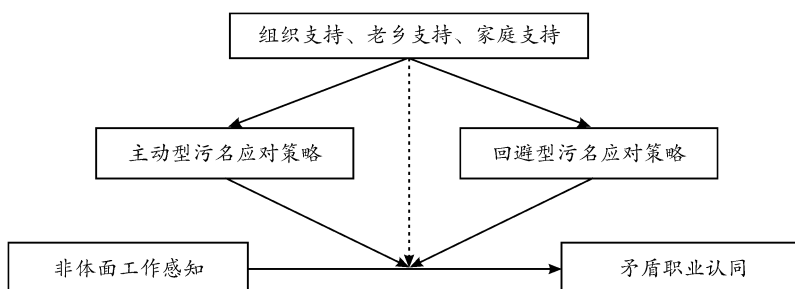


图1 研究模型

三、研究方法

(一) 研究样本与数据收集过程

本文以华南、华中及华北地区的在职医院护工为调查对象。被试选择的具体过程如下:首先通过社会关系网络与护理公司领导、护工管理者建立联系,详细介绍研究目的,并承诺对调查数据进行完全保密。在获得护理公司领导、护工管理者的支持和配合后,研究者相继获得了护工的联系方式,并与他们建立了联系。在征得受访者同意的基础上,受访者向研究者提供了手机号、邮箱等联系方式,这些信息为后续调研的具体实施与问卷配对做好准备。问卷发放尽量利用护理公司人力资源培训、线上或线下集体会议的契机,由事先联系好的管理者向护工发放纸质问卷或电子问卷。得益于管理者的大力支持,护工对此次调研给予了积极回应,每位受访者在填答完问卷后会获得20元的“红包”奖励。调研的实施过程分为两个阶段,第一个阶段由护工填写非体面工作感知、组织支持、老乡支持、家庭支持及人口统计变量的调查问卷,共发放702份问卷,回收654份问卷(回收率为93.16%)。两周后开始第二个阶段调查,研究者邀请上一阶段完成问卷的护工继续参与调研,此阶段问卷调查的变量包括主动型污名应对策略、回避型污名应对策略、矛盾职业认同,回收539份问卷(回收率为82.41%)。在剔除不满足配对要求或答案呈现明显规律的无效问卷后,共获得来自华南、华中和华北地区8家医院的530份两阶段匹配的有效问卷。

从调查的样本的总体分布来看,性别方面,以女性护工为主,占94.91%;年龄方面,护工年龄偏大,以40—60岁为主,30岁及以下占0.38%、31—40岁占10.94%、41—50岁占49.25%、51—60岁占39.43%、60岁及以上占0.38%;学历方面,护工学历偏低,以中小学为主,小学及以下占21.13%、初中占70.00%、高中或中专占8.68%、大专及以上占0.19%;工作年限方面,护工总体上工作经验比较丰富,1年以下占6.60%、1—5年占38.87%、6—10年占31.70%、11—15年占14.34%、16年及以上占8.49%;收入水平方面,护工的收入相对偏低,4000元及以下占37.55%、4001—7000元占52.08%、7001—10000元占10.19%、10001元及

以上仅占0.19%。

(二) 变量测量

本文所涉及的变量包括非体面工作感知、组织支持、老乡支持、家庭支持、主动型污名应对策略、回避型污名应对策略、矛盾职业认同。除控制变量外,所有量表均采用 Likert 5点量表。

1. 非体面工作感知。采用 Lai 等^[62]开发的量表对非体面工作感知进行测量。该量表具有良好的信效度,并得到相关研究的实证检验。原始量表涉及身体、社交和道德脏污三个维度,根据护工的工作实际,本文主要保留身体脏污和社交脏污两个维度,每个维度为4个题项。示例条目包括“我的工作会接触一些脏的东西”“我的工作需要我对病人或家属‘低三下四’”。该量表的 Cronbach's α 值为0.925。

2. 组织支持。采用 Liou 等^[46]开发的量表对组织支持进行测量,该量表共包括4个题项,示例条目包括“我们的工作环境很友好”。该量表的 Cronbach's α 值为0.908。

3. 老乡支持与家庭支持。根据 Zimet 等^[63]开发的社会支持量表,该量表包括同事、朋友以及家庭三个维度。由于本文调查的医院护工,大都是老乡“结伴”工作,周围同事大都是老乡。因此,本文老乡支持测量主要根据同事支持量表改编,将其中涉及“同事”的关键词改为“老乡”。该量表共包括4个题项,示例条目包括“工作上的事情,我可以找我的老乡帮忙”。该量表的 Cronbach's α 值为0.899。家庭支持的量表也包括4个题项,示例条目包括“工作中遇到难处,我的家人会帮我想办法解决”。该量表的 Cronbach's α 值为0.847。

4. 污名应对策略。采用周晔和黄旭^[53]开发的职业污名应对策略量表,由于原始量表研究对象为煤矿矿工,研究者对原始量表进行了调整,以更好地运用于本文。主动型污名应对策略共包括11个题项,示例条目包括:“这个社会离不开我们这群护工”“我们的职业并不像人们认为的那样‘低下’”。该量表的 Cronbach's α 值为0.929。回避型污名应对策略包括7个题项,示例条目包括:“我自己命不好,所以只能从事护工职业”“我喜欢和一些工作比我好的人打交道”。该量表的 Cronbach's α 值为0.891。

5. 矛盾职业认同。研究者采用 Ashforth 等^[14]开发的量表对矛盾职业认同进行测量,该量表共包括3个题项,示例条目包括“我对护工这个职业有很复杂的感情”。该量表的 Cronbach's α 值为0.853。

6. 控制变量。参照相关研究^[10,38],本文将受访者性别、婚姻、年龄、学历、工作年限、收入作为控制变量。对控制变量的编码为:性别方面,0 = 男,1 = 女;婚姻方面,0 = 未婚/离异/丧偶,1 = 已婚;年龄方面,1 = “30岁及以下”,2 = “31—40岁”,3 = “41—50岁”,4 = “51—60岁”,5 = “60岁及以上”;学历方面,1 = 小学及以下,2 = 初中,3 = 高中或中专,4 = 大专及以上;工作年限方面,1 = “1年以下”,2 = “1—5年”,3 = “6—10年”,4 = “11—15年”,5 = “16年及以上”;收入水平方面,1 = “4000元及以下”,2 = “4001—7000元”,3 = “7001—10000元”,4 = “10001元及以上”。

四、数据分析结果

(一) 描述性统计与相关分析

表1对主要变量与控制变量的均值、标准差与相关系数进行描述性统计分析。除老乡支持与家庭支持相关性较高外,其他所有变量的相关系数均在合理范围之内,最大相关系数为-0.444,可以初步判断变量不存在共线性的问题。由表1可知,非体面工作感知与矛盾职业认同为显著正相关($r = 0.408, p < 0.01$);组织支持与主动型污名应对策略显著正相关($r = 0.284, p < 0.01$)、与回避型污名应对策略显著负相关($r = -0.444, p < 0.01$);老乡支持与回避型污名应对策略显著负相关($r = -0.093, p < 0.05$);家庭支持与回避型污名应对策略显著负相关($r = -0.089, p < 0.05$),上述结果为研究假设提供了初步支持。

(二) 共同方法偏差检验与验证性因子分析

减少或降低共同方法偏差的方法包括程序控制和统计控制。虽然本文采用两阶段问卷获取数据,但自变量、中介变量及调节变量量表均是由护工填写,可能存在同源方差问题。本文采用 Harman 单因素检验

法进行检验,发现特征根大于1且第一因子累计百分比为33.26%,小于共同方法偏差检验临界值40%,由此可知本文数据共同方法偏差问题并不严重。本文使用 Mplus 8.3 软件,通过验证性因子分析来检验非体面工作感知、组织支持、老乡支持、家庭支持、主动型污名应对策略、回避型污名应对策略、矛盾职业认同这7个变量的区分效度。由表2可知,相较于其他6个模型,七因子模型的拟合效果最好($\chi^2/df=2.047$, $CFI=0.947$, $TLI=0.942$, $RMSEA=0.044$, $SRMR=0.041$),这说明本文的7个变量具有良好区分效度。

表1 主要变量的均值、标准差及相关系数

	均值	标准差	1	2	3	4	5	6
1. 性别	0.949	0.220						
2. 婚姻	0.970	0.171	-0.041					
3. 年龄	3.277	0.665	-0.097 *	0.040				
4. 教育	1.879	0.540	-0.020	0.022	-0.143 **			
5. 工作年限	2.792	1.046	-0.005	0.049	0.227 **	-0.188 **		
6. 收入	1.730	0.643	-0.017	-0.023	-0.019	0.048	0.158 **	
7. 组织支持	4.421	0.503	0.040	-0.050	0.097 *	-0.061	-0.002	-0.107 *
8. 老乡支持	4.464	0.761	0.043	0.071	0.014	-0.175 **	-0.019	-0.212 **
9. 家庭支持	4.482	0.747	-0.023	0.143 **	0.050	-0.214 **	-0.006	-0.232 **
10. 非体面工作感知	3.523	1.165	-0.010	-0.007	-0.139 **	0.101 *	0.038	0.107 *
11. 主动型污名应对策略	4.364	0.681	-0.019	-0.049	-0.064	-0.007	0.013	-0.034
12. 回避型污名应对策略	3.328	1.061	-0.006	0.032	-0.057	0.106 *	0.000	0.109 *
13. 矛盾职业认同	3.708	1.215	0.027	-0.033	-0.207 **	0.134 **	0.105 *	0.251 **
	7	8	9	10	11	12	13	
7. 组织支持	0.908							
8. 老乡支持	0.064	0.899						
9. 家庭支持	0.082	0.746 **	0.847					
10. 非体面工作感知	-0.383 **	-0.095 *	-0.074	0.925				
11. 主动型应对策略	0.284 **	0.016	0.021	0.199 **	0.929			
12. 回避型应对策略	-0.444 **	-0.093 *	-0.089 *	0.388 **	-0.185 **	0.891		
13. 矛盾职业认同	-0.309 **	-0.217 **	-0.267 **	0.408 **	0.325 **	0.302 **	0.853	

注: $N=530$, *表示 $p<0.05$, **表示 $p<0.01$, ***表示 $p<0.001$, 对角线数值为内部一致性信度系数。

表2 验证性因子分析结果

模型	χ^2/df	CFI	TLI	RMSEA	SRMR
七因子模型(A、B、C、D、E、F、G)	2.047	0.947	0.942	0.044	0.041
六因子模型(A、B、C+D、E、F、G)	2.217	0.938	0.933	0.048	0.042
五因子模型(A、B+C+D、E、F、G)	5.345	0.776	0.760	0.058	0.111
四因子模型(A、B+C+D+E、F、G)	7.358	0.670	0.649	0.110	0.153
三因子模型(A、B+C+D+E+F、G)	9.835	0.540	0.513	0.129	0.187
二因子模型(A+G、B+C+D+E+F)	10.627	0.497	0.469	0.190	0.135
单因子模型(A+B+C+D+E+F+G)	14.007	0.320	0.282	0.157	0.207

注: A表示非体面工作感知; B表示组织支持; C表示老乡支持; D表示家庭支持; E表示主动型污名应对策略; F表示回避型污名应对策略; G表示矛盾职业认同。

(三) 假设检验

根据 Grant 和 Berry^[34]的检验假设程序。首先,以矛盾职业认同为因变量,考察非体面工作感知对矛盾职业认同的直接效应。表3模型1的结果显示,非体面工作感知对矛盾职业认同呈显著的正向影响($\beta=0.367$, $p<0.001$)。因此, $H1$ 得到验证。随后,依据调节回归程序,考察非体面工作感知、多重支持资源(工作支持、老乡支持、家庭支持)及其交互项对矛盾职业认同的影响。表3模型2的结果显示,非体面工作感知与组织支持的交互项对矛盾职业认同呈显著的负向影响($\beta=-0.426$, $p<0.001$)。为了更直观呈现组织支持的调节效应,本文参照 Aiken 和 West^[64]的做法进行绘图。从图2可见,在护工感知较高组织支持的情况

下,非体面工作感知与矛盾职业认同呈不显著的负向关系;在护工感知较低组织支持的情况下,非体面工作感知与矛盾职业认同的正向关系较强,H2a 得到进一步验证。表3模型3的结果显示,非体面工作感知与老乡支持的交互项对矛盾职业认同具有显著的负向影响($\beta = -0.131, p < 0.05$)。从图3可见,在护工感知较高老乡支持的情况下,非体面工作感知与矛盾职业认同的正向关系较弱;在护工感知较低老乡支持的情况下,非体面工作感知与矛盾职业认同的正向关系较强,H2b 得到进一步验证。表3模型4的结果显示,非体面工作感知与家庭支持的交互项对矛盾职业认同具有显著的负向影响($\beta = -0.161, p < 0.01$)。从图4可见,在护工感知较高家庭支持的情况下,非体面工作感知与矛盾职业认同的正向关系较弱;在护工感知较低家庭支持的情况下,非体面工作感知与矛盾职业认同的正向关系较强,H2c 得到进一步验证。

表3 多重支持调节效应回归分析结果

变量	矛盾职业认同			
	模型1	模型2	模型3	模型4
性别	0.103 (0.211)	0.141 (0.203)	0.160 (0.206)	0.094 (0.207)
婚姻	-0.192 (0.270)	-0.188 (0.260)	-0.066 (0.264)	0.011 (0.192)
年龄	-0.303*** (0.073)	-0.266*** (0.070)	-0.306*** (0.071)	-0.323*** (0.072)
教育	0.201* (0.088)	0.194* (0.085)	0.100 (0.088)	0.146 (0.088)
工作年限	0.137** (0.047)	0.140** (0.045)	0.143** (0.046)	0.142 (0.046)
收入	0.353*** (0.073)	0.329*** (0.071)	0.278*** (0.073)	0.304** (0.073)
非体面工作感知	0.367*** (0.040)	0.312*** (0.042)	0.366*** (0.039)	0.361*** (0.040)
组织支持		-0.377*** (0.096)		
老乡支持			-0.300*** (0.062)	
家庭支持				-0.194** (0.064)
非体面工作感知×组织支持		-0.426*** (0.080)		
非体面工作感知×老乡支持			-0.131* (0.052)	
非体面工作感知×家庭支持				-0.161** (0.054)
<i>F</i>	24.900	25.893	23.684	22.318
<i>R</i> ²	0.250	0.309	0.291	0.279

注: $N=530$, *表示 $p < 0.05$, **表示 $p < 0.01$, ***表示 $p < 0.001$,括号数值为标准误。

其次,表4的模型1至模型3以主动型污名应对策略为因变量,模型4至模型6以回避型污名应对策略为因变量,考察组织支持、老乡支持、家庭支持对污名应对策略的直接效应。模型1和模型4结果显示,组织支持对主动型污名应对策略具有显著的正向影响($\beta = 0.396, p < 0.001$),对回避型污名应对策略具有显著的负向影响($\beta = -0.913, p < 0.001$)。由此可见,本文的H3a得到了验证。模型2和模型5结果显示,老乡支持对主动型污名应对策略不显著($\beta = 0.018, p = 0.662$),对回避型污名应对策略也不显著($\beta = -0.069, p = 0.275$),H3b没有得到验证。模型3和模型6结果显示,家庭支持对主动型污名应对策略不显著($\beta = 0.014$,

$p = 0.740$),对回避型污名应对策略也不显著($\beta = -0.092, p = 0.153$),H3c 没有得到验证。

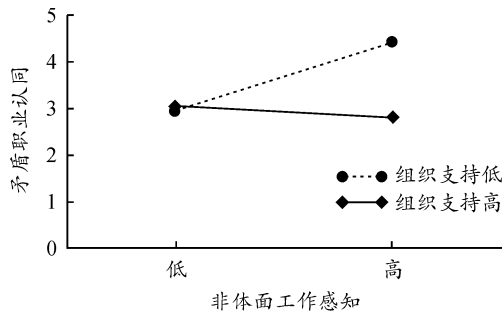


图2 组织支持对非体面工作感知与矛盾职业认同关系的调节效应

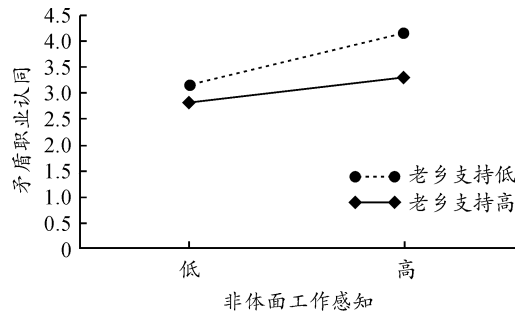


图3 老乡支持对非体面工作感知与矛盾职业认同关系的调节效应

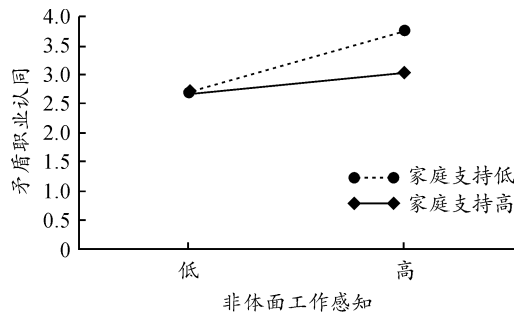


图4 家庭支持对非体面工作感知与矛盾职业认同关系的调节效应

表4 多重支持对污名应对策略直接效应回归分析结果

变量	主动型污名应对策略			回避型污名应对策略		
	模型1	模型2	模型3	模型4	模型5	模型6
性别	-0.132 (0.130)	-0.094 (0.136)	-0.090 (0.136)	0.069 (0.189)	-0.015 (0.210)	-0.033 (0.209)
婚姻	-0.135 (0.167)	-0.202 (0.174)	-0.205 (0.176)	0.067 (0.243)	-0.231 (0.269)	0.266 (0.271)
年龄	-0.106* (0.045)	-0.077 (0.046)	-0.077 (0.046)	-0.005 (0.065)	-0.071 (0.072)	-0.075 (0.071)
教育	0.006 (0.054)	-0.004 (0.058)	-0.006 (0.057)	0.151 (0.079)	0.167 (0.089)	0.164 (0.089)
工作年限	0.027 (0.029)	0.025 (0.030)	0.025 (0.030)	0.005 (0.042)	0.010 (0.046)	0.009 (0.046)
收入	-0.014 (0.045)	-0.041 (0.048)	-0.042 (0.048)	0.097 (0.066)	0.152* (0.074)	0.148* (0.074)
组织支持	0.396*** (0.057)			-0.913*** (0.083)		
老乡支持		0.018 (0.041)			-0.069 (0.064)	
家庭支持			0.014 (0.042)			-0.092 (0.064)
F	7.665	0.763	0.751	19.490	2.083	2.209
R ²	0.093	0.010	0.010	0.207	0.027	0.029

注: $N = 530$, *表示 $p < 0.05$, **表示 $p < 0.01$, ***表示 $p < 0.001$, 括号数值为标准误。

最后,由表5的模型1和模型2可知,非体面工作感知与主动型污名应对策略的交互项对矛盾职业认同具有显著的负向影响($\beta = -0.208, p < 0.001$),非体面工作感知与回避型污名应对策略的交互项对矛盾职

业认同具有显著的正向影响($\beta = 0.233, p < 0.001$), H4a 和 H4b 得到数据的支持。图5显示,当主动型污名应对策略更高的情况下,非体面工作感知与矛盾职业认同的正向关系更弱;而当主动型污名应对策略更低的情况下,非体面工作感知与矛盾职业认同的正向关系更强, H4a 得到进一步的验证。图6显示,当回避型污名应对策略更高的情况下,非体面工作感知与矛盾职业认同呈正向关系更强;而当回避型污名应对策略更低的情况下,非体面工作感知与矛盾职业认同的正向关系不显著, H4b 得到进一步的验证。

前面的分析结果表明,主动型污名应对策略、回避型污名应对策略对非体面工作感知与矛盾职业认同的调节作用成立,由于 H3b、3c 没有得到验证,因而只需进一步验证 H5a 是否成立。由表5的模型3可知,非体面工作感知与主动型污名应对策略的交互项系数显著($\beta = -0.302, p < 0.001$),非体面工作感知与回避型污名应对策略的交互项系数也显著($\beta = 0.133, p < 0.001$),而非体面工作感知与组织支持的交互项系数不显著($\beta = 0.017, p > 0.05$)。由此可见,组织支持对非体面工作感知与矛盾职业认同的调节效应被主动型污名应对策略和回避型污名应对策略所中介, H5a 得到数据支持。

表5 组织支持对矛盾职业认同间接效应回归分析结果

变量	矛盾职业认同		
	模型1	模型2	模型3
性别	0.159 (0.199)	0.135 (0.200)	0.268 (0.177)
婚姻	-0.073 (0.255)	-0.150 (0.257)	-0.146 (0.163)
年龄	-0.271 *** (0.069)	-0.300 *** (0.069)	-0.231 *** (0.061)
教育	0.224 ** (0.083)	0.145 (0.084)	0.180 * (0.074)
工作年限	0.127 ** (0.044)	0.129 ** (0.044)	0.124 ** (0.039)
收入	0.389 *** (0.069)	0.317 *** (0.070)	0.329 *** (0.062)
非体面工作感知	0.303 *** (0.039)	0.300 *** (0.041)	0.061 (0.042)
组织支持			-0.759 *** (0.102)
主动型应对策略	0.264 ** (0.083)		0.417 *** (0.078)
回避型应对策略		0.262 *** (0.047)	0.295 *** (0.045)
非体面工作感知 × 组织支持			0.017 (0.092)
非体面工作感知 × 主动型应对策略	-0.208 *** (0.052)		-0.302 *** (0.050)
非体面工作感知 × 回避型应对策略		0.233 *** (0.036)	0.133 *** (0.037)
<i>F</i>	29.211	27.798	36.450
<i>R</i> ²	0.336	0.325	0.479

注: $N = 530$, *表示 $p < 0.05$, **表示 $p < 0.01$, ***表示 $p < 0.001$, 括号数值为标准误。

为进一步验证 H5a, 本文遵循 Grant 和 Berry^[34]的方法估计组织支持通过污名应对策略影响非体面工作感知与矛盾职业认同关系的间接效应。本文采取 Bootstrap 法(5000次), 计算出间接效应的估计值。当间

接效应的95% 置信区间中不包括零时,被中介的调节效应假设得到的支持。分析结果如表6所示,组织支持通过主动型污名应对策略影响非体面工作感知与矛盾职业认同关系的间接效应值为-0.061,95% 的置信区间为[-0.088,-0.039],不包含零。同样,组织支持通过回避型污名应对策略影响非体面工作感知与矛盾职业认同关系的间接效应值为-0.058,95% 的置信区间为[-0.101,-0.025],不包含零。H5a 得到进一步验证。

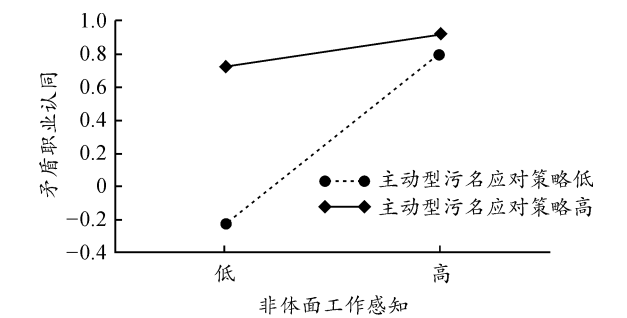


图5 主动型污名应对策略对非体面工作感知与矛盾职业认同关系的调节效应

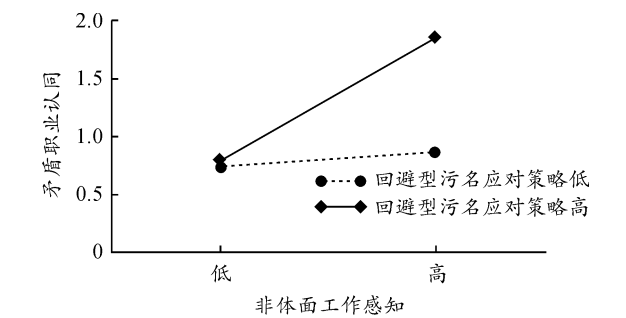


图6 回避型污名应对策略对非体面工作感知与矛盾职业认同关系的调节效应

表6 模型的直接效应、间接效应与总效应

		直接效应	间接效应	总效应
P_{SP}	P_{XP}	P_{XS}	$P_{SP}P_{XP}$	$P_{XS} + P_{SP}P_{XP}$
0.294	-0.207	0.018	-0.061	-0.043
P_{SA}	P_{XA}	P_{XS}	$P_{SA}P_{XA}$	$P_{XS} + P_{SA}P_{XP}$
-0.432	0.134	0.018	-0.058	-0.040

注:直接效应是指非体面工作感知与组织支持交互项对矛盾职业认同的回归系数,间接效应是指污名应对策略的间接效应, P_{SP} 是指组织支持对主动型污名应对策略的路径系数, P_{SA} 是指组织支持对回避型污名应对策略的路径系数, P_{XP} 是指非体面工作感知与主动型污名应对策略交互项对矛盾职业认同的回归系数, P_{XA} 是指非体面工作感知与回避型污名应对策略交互项对矛盾职业认同的回归系数, P_{XS} 是指非体面工作感知与组织支持交互项对矛盾职业认同的回归系数。

五、结论与讨论

(一) 研究结论

基于压力转换理论,以医院护工为研究对象,本文旨在探索多重支持资源对非体面工作感知与矛盾职业认同的影响机制,尤其是考察主动型和回避型污名应对策略的中介作用。主要研究结论包括:首先,多重支持资源对非体面工作感知与矛盾职业认同的关系都具有调节作用,即当护工组织支持、老乡支持、家庭支持较高时,非体面工作感知与矛盾职业认同负向关系更弱。换言之,多重支持资源不仅有助于护工应对污名压力,而且能引导护工以更加积极的眼光看待自身职业,进而削弱矛盾职业认同。其次,组织支持正向影响主动型污名应对策略,负向影响回避型污名应对策略。老乡支持、家庭支持对护工污名应对策略选择没有显著的影响。这一结果可能与污名压力的来源有关。对于非体面工作从业者而言,非体面工作感知大都源于社会偏见和职业歧视。从业者进入职业之前,也可能对自身职业持有偏见。一旦他们在工作过程拥有丰富的资源(如高组织支持)时,容易使其重新审视自身的职业,并进一步影响其污名应对策略的选择。然而,对于护工群体而言,他们大都以老乡圈子为纽带,且获得较高的家庭支持。老乡支持和家庭支持这些关系、情感资源相对较为稳定,对他们污名应对策略选择的影响相对较小。主动型污名应对策略会削弱非体面工作感知与矛盾职业认同之间的正向关系,回避型污名应对策略则会强化非体面工作感知与矛盾职业认同之间的正向关系。最后,主动型和回避型污名应对策略中介了组织支持对非体面工作感知与

矛盾职业认同关系的调节效应。

(二) 理论贡献

首先,非体面工作感知对从业者身份认同的影响是学者关注的重点问题,非体面工作从业者的身份认同过程较为复杂,他们或多或少对自身职业持矛盾心理。然而,以往关于非体面工作感知与矛盾职业认同关系的研究尚未得到一致的结论,因而需要进一步探讨二者关系的边界条件。以往研究大都聚焦于探讨支持性资源对从业者身份认同的影响及其机制^[6,20],对于多重支持资源在非体面工作感知与矛盾职业认同中发挥的作用知之甚少。因而,多重支持资源引入非体面工作感知与职业认知的关系当中,是对当前研究的一个有益补充。本文发现,多重支持资源(组织支持、老乡支持、家庭支持)将削弱非体面工作感知与矛盾职业认同之间的正向关系。这一结论从资源因素角度为以往非体面工作感知和职业身份认同关系研究的不一致结论提供了独特的解释,也进一步拓展了非体面工作感知与矛盾职业认同关系的影响边界研究。

其次,以往关于非体面工作的研究,大都探讨其对从业者身心健康、工作表现等方面影响^[10,65],部分研究也探讨了污名压力情景下从业者可能采取的应对策略^[21-22,66],对于从业污名应对策略的影响因素却鲜有研究^[45]。本文发现,组织支持作为一种重要的工作资源,对主动型污名应对策略有正向影响,对回避型污名应对策略有负向影响,而主动型和回避型污名应对策略都对非体面工作感知与矛盾职业认同关系具有调节作用。这一结论不仅丰富了组织情景与污名应对策略的研究^[23],也进一步从污名应对策略的视角更好地诠释了非体面工作感知与矛盾职业认同的影响,并对作用边界加以识别。

最后,本文根据压力转换理论,假设并验证了多重支持资源对非体面工作感知和矛盾职业认同关系的调节作用是通过职业污名应对策略而实现的。这一发现不仅验证了压力应对视角在非体面工作情景的适用性,也进一步证实了污名应对策略是受个体资源影响这一理论推断^[6,23],这对我们更深刻地理解支持性资源调节作用的产生机理具有重要的理论建构意义。更重要的是,本文将多重支持资源、污名应对策略、非体面工作感知、矛盾职业认同等相关研究加以整合,系统探讨多重支持资源如何发挥积极的干预作用,研究发现丰富了学界对非体面工作从业者矛盾职业认同干预策略的认识。

(三) 实践启示

首先,组织应当努力为非体面工作从业者提供支持性的组织环境,致力于构建“强”的职业和工作群体文化。本文的研究结果发现,多重支持资源(组织支持、老乡支持、家庭支持)都会削弱从业者非体面工作感知与矛盾职业认同之间的正向关系。一般而言,非体面工作从业者通常难以获得社会外界的支持和理解,当从业者具有充裕的支持资源时,即使他们在工作过程中面临污名压力,仍然能找到排解压力的“缓冲区”。来自组织、老乡或者家庭的支持,不仅可以提高从业者的压力应对能力,也可能重塑职业的价值,从而降低对自身职业的矛盾认同心理,最终能更加舒心地投入日常工作之中。

其次,对于遭受污名歧视的员工而言,不应自暴自弃或针锋相对,而是应当正视问题并采取有效的应对策略。本文的研究结果发现,主动型污名应对策略可以缓解从业者的矛盾职业认同,而回避型污名应对策略则会强化从业者的矛盾职业认同。鉴于此,一方面,员工应当准确判断“污名化”问题是否真实存在。由于非体面工作感知源于个体主观感知,某些较为敏感的员工往往将他人不经意的行为归结为歧视,由此造成一些不必要的困扰。另一方面,当确定职业污名确实存在时,应当分析污名产生的具体原因,并采取积极应对策略。例如,当遭遇污名是由于自身行为不当时,员工应虚心改正;当“污名化”的根源无法解决时,则应适时调整心态,做好本职工作。此外,组织应当承担积极角色,定期对员工进行沟通培训,引导员工以更加辩证的视角看待自身职业。

(四) 研究局限与未来研究展望

第一,本文样本局限在医院护工群体,这不可避免地对外部效度造成影响。护工工作主要涉及身体和社交两个方面的脏污属性,但从业者对不同脏污属性的非体面工作反应存在一定差异^[43]。未来研究可进一步收集其他非体面工作群体的数据,以提高研究结论的概化性。第二,本文采用横截面的研究设计,难以准确反映变量间的因果关系。此外,尽管采取两阶段收集问卷,但本文采用护工自我报告方式收集

数据,仍可能存在一定的同源偏差。未来可以从实验法或延长变量测量时间间隔,以期提高研究的科学性和可信度。第三,本文借鉴相关研究^[32,53],将污名应对策略划分为主动应对和回避应对两种类型。虽然这一分类方式与非体面工作的研究主题相契合,但没有一种分类能够完全反映应对的结构^[36]。未来的研究可以进一步探讨其他压力应对策略的作用,如问题聚焦和情绪聚焦的压力应对策略等。

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Reporting good news but not bad: the dual effect of employee stewardship behavior on work–family interface

Work–family
interface

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Abstract

Purpose – Stewardship behavior is an important embodiment of the spirit of employee ownership, which is critical to the sustainability of companies, especially under the influence of the COVID-19 epidemic. Most previous studies have focused on how to motivate employees' stewardship behavior, but little is known about how stewardship behavior affects employees themselves. The purpose of this study is to explore how employee stewardship behavior affects their work–family interface based on the conservation of resources (COR) theory.

Design/methodology/approach – In this study, structural equation modeling was conducted using two-wave survey data from 323 employees through three internet companies in Southern China.

Findings – Results reveal that engaging in stewardship behavior is positively correlated with both positive emotion and emotional exhaustion. Positive emotion and emotional exhaustion, in turn, mediate the effects of stewardship behavior on work–home interface. Family motivation influences the strength of the relationships between positive emotion or emotional exhaustion and work–family interface, that is, high family motivation

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Conflict of interest: There is no conflict of interest among authors.

Ethical approval: This study was approved by the institutional review board of South China University of Technology. The questionnaires were filled in anonymously, and the authors promise that personal information about the participants will be kept confidentially.

Data availability statement: The data sets used and analyzed in the current study are available from the corresponding author upon reasonable request.



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strengthens the positive association between positive emotion and work–family enrichment and weakens the positive association between emotional exhaustion and work–family conflict.

Practical implications – This study suggests that managers should give employees more support and care to ease the worries of engaging in stewardship behavior. Also, organizations should recruit employees with high family motivation, which can reduce the negative effects of stewardship behavior on work–family interface.

Originality/value – Based on an actor’s perspective, this study examines both the positive and negative effects of stewardship behavior on employees themselves, thereby increasing understanding of the dual effect of stewardship behavior. In addition, this study further elucidates the mechanisms that moderate the positive and negative effects of individual family motivation on their engagement in stewardship behavior within the COR theory.

Keywords Employee stewardship behavior, Positive emotion, Emotional exhaustion, Work–family enrichment, Work–family conflict, Family motivation

Paper type Research paper

1. Introduction

Stewardship behavior refers to individuals’ willingness to sacrifice personal interests to protect the long-term interests of a collective or an organization (Davis *et al.*, 2010). Most studies have focused on how to motivate employee stewardship behavior (Davis *et al.*, 1997; Hernandez, 2012; Choi *et al.*, 2018) and concluded that supervisors’ stewardship behavior positively affects employees and organizations, including stimulating individual creativity (Domínguez-Escrig *et al.*, 2019; Le Breton-Miller *et al.*, 2011; Kuppelwieser, 2011), improving organizational performance and competitive advantage (Kang *et al.*, 2023; Miller and Le Breton-Miller, 2006), and ultimately achieving the sustainability of organizations (Aßländer *et al.*, 2016; Francoeur *et al.*, 2017). Moreover, employee stewardship is more prevalent in China because the collectivist-oriented culture emphasizes values of harmony, reciprocation and occupational achievement (Arun and Kahraman Gedik, 2022), which motivates employees to implement altruistic behaviors and deeper ingroup involvement (Okun *et al.*, 2020; Qian *et al.*, 2022). However, few studies have examined the potential negative effects of employee stewardship behavior on employees themselves and their families (Qian *et al.*, 2022). With the shift toward remote work, the relevance of this gap in research grows. Stewardship in remote work contexts is crucial for enhancing management efficiency and reducing monitoring costs, but it also risks blurring the lines between work and family, potentially impacting employees’ family lives negatively. Therefore, this study aims to answer the research question: How and when does stewardship behavior affect employees and their work–family interface in the context of remote work?

Scholars have called for more attention to both the dark and the bright side of pro-social behaviors such as stewardship (Bolino *et al.*, 2015; Bolino and Grant, 2016) to reveal the dual impact of stewardship behavior and improve its effectiveness and sustainability. Especially during the epidemic, the issue of work–family balance with employees telecommuting and working from home received widespread attention (Fan *et al.*, 2022). Thus, it is crucial to understand how stewardship behavior affects employees and their work–family interface. Theoretically, the findings of this study can make up for the lack of studies on the impact of employee stewardship behavior, especially on employees and their work–family interface. Practically, a comprehensive understanding of the dual effect of employee stewardship behavior may help management identify and intervene in the undesirable implications of stewardship behavior.

To reveal the impact of employee stewardship behavior on their work–family interface, this paper constructs a dual-path model based on the conservation of resources (COR) theory

(Hobfoll, 1989; Halbesleben *et al.*, 2014). COR theory proposes that people acquire, invest and protect resources that they value to cope with stress. Resources are loosely defined as any competencies, objects, personal characteristics, energies or conditions that people value (Hobfoll, 1989). Employees are motivated to preserve their resources and invest them to gain additional resources. Importantly, COR theory posits that daily events, such as engaging in stewardship behavior, can induce both resource generation and resource consumption paths (Hobfoll *et al.*, 2018). Through this resource perspective, we can achieve a coherent picture of the effects of employees' stewardship behavior on their work–family interface.

As an essential psychological resource, emotion has a significant impact on employees' workplace well-being and their work–family interface (Bono *et al.*, 2013; Shockley *et al.*, 2022). Based on theoretical relevance and suggestions from previous studies (Baer *et al.*, 2015; Bolino *et al.*, 2015; Koopman *et al.*, 2016), positive emotion was considered a resource-generation mechanism, whereas emotional exhaustion was considered a resource-consumption mechanism. On the one hand, employees actively engage in stewardship behavior and are willing to work hard for the long-term benefits of the organizations. They will likely receive responses from the external environment that generate positive emotion (Bono *et al.*, 2013), which promotes work–family enrichment (Hammond *et al.*, 2015; Moazami-Goodarzi *et al.*, 2015). On the other hand, when employees give too much time and energy to their stewardship role at work, they may become emotionally exhausted (Lanaj *et al.*, 2016) and unable to fulfill their family role obligations, which may lead to work–family conflict (Leroy *et al.*, 2021). Therefore, we propose that employees' stewardship behavior has a dual effect on their work–family interface. If employees' stewardship behavior has a dual effect on their work–family interface, what situations can increase the positive impact and decrease the negative impact of stewardship behavior? To explore this critical issue, family motivation is introduced as a boundary condition for the relationship between employee stewardship behavior and their work–family interface. Family motivation refers to an individual's willingness to exert effort for the benefit of the family (Menges *et al.*, 2017). Previous research suggests that when employees' family motivation is high, they have a higher tendency to obtain resources from work to feed their families (Zhang *et al.*, 2020). The strong family value makes Chinese people not only work hard to provide for their families but also selectively report good news to reduce family worries (Schwartz *et al.*, 2012). Therefore, family motivation may reinforce the positive effects of positive emotion while weakening the adverse effects of emotional exhaustion on employees' work–family interface.

This study contributes to the relevant literature in several ways. First, most previous studies have focused on how to motivate employee stewardship behavior, ignoring the effect of stewardship on employees themselves. This study examines the dual effect of employee stewardship behavior on their own by taking the actor's perspective, which deepens our understanding of the aftereffects of employee stewardship behavior. Second, existing works on stewardship behavior have mainly concentrated on the workplace, whereas the family spillover effects of stewardship behavior have received less attention. According to COR theory, we explore how stewardship behavior affects employees' work–family interface and reveal the dual effect of stewardship behavior, providing a more comprehensive perspective on the family spillover effects of stewardship behavior. Third, this study provides important empirical evidence on the boundary conditions between the impact of employee stewardship behavior on work–family interface by revealing the moderating role of family motivation. This finding highlights the importance of intrinsic work motivation (e.g. family motivation) in promoting work–family balance in Chinese cultural contexts, rather than merely relying on external support and intervention.

2. Theoretical background and hypotheses

2.1 *The positive effects of employee stewardship behavior: resource generation function*

According to COR theory, stewardship behavior can boost employees' positive emotion through its resource generation function (Christofi *et al.*, 2023). Positive emotion is a pleasant feeling, such as happiness, satisfaction, pride, interest and appreciation (Watson *et al.*, 1988). Adequate resources are an important trigger for positive emotion, and engaging in stewardship behavior can help employees develop work and interpersonal resources (Bono *et al.*, 2013; Lilius, 2012). Specifically, considering that stewardship is a voluntary activity, employees can experience full autonomy in the process of engaging in stewardship behavior, which, in turn, enriches their work resources (Weinstein and Ryan, 2010). Stewardship behavior also can enhance organizational performance, which allows employees to experience a sense of competence and positive emotion (Davis *et al.*, 1997). In addition, stewardship behavior focuses on enhancing and balancing the well-being of various stakeholders within and outside the organizations, which makes it easy for employees to gain positive responses and trust from other stakeholders and helps enhance their interpersonal resources (Hernandez, 2012). Consequently, when employees actively engage in stewardship behavior, they are enriched with work and interpersonal resources and further enhance their positive emotion.

From the perspective of COR theory, positive emotion, as a foundational resource, can help employees increase other types of resources, such as work–family enrichment (Kacmar *et al.*, 2020). The positive emotion employees gain through stewardship behavior can further influence the work–family interface (Greenhaus and Powell, 2006). Positive emotion can motivate individuals' approach to their goals (Watson *et al.*, 1999). When employees have positive emotion, they are motivated to stay close to family members and establish friendly interactions, resulting in work–family enrichment (Heskiau and McCarthy, 2021). Moreover, positive emotion can expand individuals' attention spans (Fredrickson and Branigan, 2005). Therefore, employees with positive emotion are more likely to be aware of the needs of their family members and to perform family-related roles consciously, resulting in positive spillover effects of stewardship behavior (Heskiau and McCarthy, 2021). When employees are aware of their family's needs, they do not neglect family responsibilities because of focusing too much on work, thus reducing work–family conflict. In addition, COR theory suggests that positive emotion can also enhance employees' ability to cope with stress, as it can buffer the negative impact of resource consumption (Hobfoll, 1989; Hobfoll *et al.*, 2018). Therefore, they do not bring the bad state at work into their family life, reducing the likelihood of work–family conflict (Wang *et al.*, 2022). In summary, engaging in stewardship behavior can increase positive emotion and thus improve the work–family interface. We propose:

- H1.* Stewardship behavior enhances employees' positive emotion, thereby increasing work–family enrichment (*H1a*) and reducing work–family conflict (*H1b*).

2.2 *The negative effects of employee stewardship behavior: resource consumption function*

The resource loss principle of COR theory suggests that the loss of resources has a more detrimental effect on individuals' psychology than the gain of resources, and one of the consequences of this harm is emotional exhaustion (Halbesleben *et al.*, 2014). Emotional exhaustion refers to the feeling of being emotionally and physically depleted and exhausted because of excessive use (Maslach and Leiter, 2008; Li *et al.*, 2023). Stewardship behavior can also have a negative impact on employees through resource consumption mechanisms (Qian *et al.*, 2022). Specifically, stewardship behavior may trigger resource depletion by consuming limited resources such as individuals' time and energy, thus leading to emotional

exhaustion (Baer *et al.*, 2015; Qian *et al.*, 2022). Namely, when individuals engage in activities that require self-regulation (e.g. expending energy and voluntary sacrifice), they will deplete their psychological resources (Baer *et al.*, 2015; Lanaj *et al.*, 2016). Once employees are expected to handle a large number of work tasks and substantial effort is required, they may experience a high workload and emotional exhaustion (Maslach and Leiter, 2016). They need to devote physical and mental resources to other matters in addition to fulfilling the requirements of their jobs (Hernandez, 2012). Employees will consume considerable resources to meet the demands of these kinds of complex and challenging decision-making tasks, which further increases resource depletion (Lin *et al.*, 2016).

According to COR theory, when individuals are threatened with a loss of resources, they will tend to conserve their remaining resources rather than invest in other domains (Hobfoll, 1989; Lan *et al.*, 2020). This study argues that employees who feel a loss of resources may choose to conserve their resources and reduce their involvement in the family domain, which further leads to work–family conflict (Chen *et al.*, 2020). When employees are emotionally exhausted because of their stewardship behavior, they may not be able to meet their family responsibilities due to a lack of resources, which ultimately causes work–family conflict and reduces work–family enrichment (Greenhaus and Powell, 2006). Specifically, emotionally exhausted individuals are unable to accompany their families owing to a lack of time and energy, take much less care for their needs and provide adequate social-emotional support to family members (Lin *et al.*, 2016; Lan *et al.*, 2020). At the same time, emotionally depleted employees feel exhausted at work and have difficulty having a good work experience, which further leads to negative work-related spillover effects on the family domain (Greenhaus and Powell, 2006). Moreover, it is inevitable for employees to bring poor conditions into their family domain when they suffer from emotional exhaustion at work, which is likely to raise the risk of work–family conflict and interpersonal harm to family members (Greenbaum *et al.*, 2014; Tang *et al.*, 2016). In addition, bringing their good status to the family domain in a situation of emotional exhaustion is difficult for employees, which reduces their willingness and motivation to participate in family activities and perform family responsibilities (Greenhaus and Powell, 2006; Lan *et al.*, 2020), thus reducing work–family enrichment. In summary, engaging in stewardship behavior may cause emotional exhaustion and then negatively affect the work–family interface. We propose:

- H2.* Stewardship behavior increases employees' emotional exhaustion, thereby reducing work–family enrichment (*H2a*) and increasing work–family conflict (*H2b*).

2.3 The moderating role of family motivation

Drawing on COR theory, resources are loosely defined as any competencies, objects, personal characteristics, energies or conditions that individuals value (Hobfoll, 1989). Family motivation, as a key resource replenishment mechanism (Menges *et al.*, 2017), will affect the relationship between stewardship behavioral affective responses to work–family interface. The family is an important component of an individual's self. Across different cultural backgrounds, people acknowledge the significant importance of family (Schwartz *et al.*, 2012). Supporting the family is one of the important motivations and spiritual pillars for individuals' work engagement (Menges *et al.*, 2017). Particularly in Chinese culture that emphasizes Confucianism and collectivism, family harmony serves as the foundation of social stability. "Establishing a family and achieving success" and "earning money to support the family" are also the goals of Chinese employees. Menges *et al.* (2017) defined family motivation as a willingness to work hard for the benefit of the family. Contributing to the family is often considered one of the basic reasons why employees work hard (Brief *et al.*,



1997), and it is an important source of a sense of meaningful work (Tariq and Ding, 2018). Therefore, family motivation may affect the allocation of personal resources between work and family domains. Especially in the Chinese context, work is an important means of enhancing the benefits and honor of the whole family, and working hard can demonstrate the employees' sense of family responsibility (Zhang *et al.*, 2020). Thus, highly family-motivated employees tend to report good news but not bad news to their families, which, in turn, affects the family spillover effects of stewardship behavior. This paper argues that family motivation will moderate both the relationship between positive emotion and work–family enrichment and between emotional exhaustion and work–family conflict.

Unlike job orientation, which views work as a means to achieve other goals, experiencing strong family motivation does not imply that employees cannot enjoy their work and find meaning in it. Instead, it can serve as a significant source of meaning and energy (Menges *et al.*, 2017). Factors such as caring for the family, feelings of pride in the family and the desire to provide for the family can act as motivational forces in the workplace, enhancing effort and performance and facilitating access to supportive resources (Zhang *et al.*, 2020). As a result, employees with high family motivation often possess more available mental or material resources, allowing them to allocate these resources between work and family domains, thereby improving the work–family relationship (Erdogan *et al.*, 2022). In addition, highly family-motivated employees tend to benefit their families and thus proactively transmit positive emotions to family members (Grant, 2008), resulting in better work–family enrichment. In contrast, employees with low family motivation are less likely to receive supportive resources from work. They are easily trapped in a spiral of resource depletion and become more sensitive to emotional exhaustion. More seriously, lowly family-motivated employees have less willingness to benefit their families, and they may bring negative emotions from work to their families (Alcover *et al.*, 2023). They even see family as an outlet for negative emotions, which, in turn, increases work–family conflict. We propose:

H3. Family motivation strengthens the positive relationship between positive emotion and work–family enrichment (H3a) and weakens the positive relationship between emotional exhaustion and work–family conflict (H3b) (Figure 1).

3. Methodology

3.1 Sampling and data collection

We used convenience sampling (Etikan *et al.*, 2016) to recruit corporate executives who were attending master of business administration programs in southern China. A total of eight corporate executives voluntarily participated in the study. The final sample inclusion criteria were based on two factors:

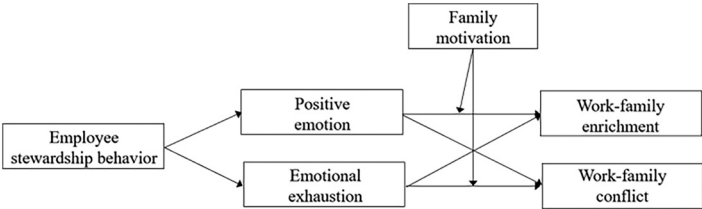


Figure 1. Conceptual model of this study

Source: Figure created by authors

- (1) the companies had implemented telecommuting systems, with the majority of employees working from home or using flexible work arrangements during the epidemic; and
- (2) the companies operated in highly competitive industries where employees frequently worked overtime and faced significant work-family balance challenges.

Consequently, only three out of the eight companies met these strict sampling criteria. The data were collected in two waves from these three internet companies. All three companies are software development companies that provide customers with digital, intelligent, platform-based and ecological enterprise cloud service products and solutions in fields such as finance, human resources, supply chain, procurement, manufacturing, marketing and research and development. The average size of these companies is around 200 people, and they all have well-established mobile office systems. Internet companies provide an ideal sample for this study because of the prominent workload and work-life balance issues faced by employees. Also, the survey period coincided with the epidemic blockade, during which, employees of these three companies used remote office systems for working from home. This situation further blurred the boundaries between work and home. In this scenario, employees with stewardship behavior could actively invest more resources into work without real-time monitoring, ensuring the smooth completion of tasks.

To minimize the effect of common method bias (CMB), this study specifically controlled for the measurement procedure. We conducted a two-wave survey by administering the same questionnaire to the same employees at two separate time points (two weeks apart). Also, we randomly arranged the measurement items in the questionnaire and ensured anonymity for all employees to reduce employee speculation about the measurement items. We first contacted the HR directors to confirm the employees who would participate in the survey. The researchers then introduced the purpose, procedure, anonymity and confidentiality of this study to the participants. In the first wave, a total of 400 full-time employees were invited to participate in our research. Participants completed measures of stewardship behavior, family motivation and reported demographic information. We received completed questionnaires from 356 participants, resulting in a response rate of 91.25%. In the second wave, 365 questionnaires were distributed to participants who had completed the first survey. Measures of positive emotion, emotional exhaustion, work-family enrichment and work-family conflict were administered, and 341 participants completed the survey, yielding a response rate of 93.42%. After eliminating invalid questionnaires with missed items and repeated answers, we retained a final sample of 323 participants. Among these employees, 56.97% were female and 49.23% had associate college or above. The participants' average age was 31.52 years ($SD = 9.46$), and 56.97% of them were employed in a position for one to five years.

3.2 Measures

All of the variables, except for the demographic data, were evaluated using five-point Likert-type scales. We made modest changes to make sure that all elements are appropriate for the study context, in accordance with the advice of two professors in the relevant research field.

A three-item scale from [Davis et al. \(2010\)](#) was used to measure stewardship behavior. "I take a long-term attitude in my daily job rather than focusing on short-term interests," was an example item. The Cronbach's alpha for this scale was 0.82.

A five-item scale developed by [Watson et al. \(1988\)](#) was used to measure positive emotion. A sample item was: "I am happy recently." The Cronbach's alpha for this scale was 0.95.

A five-item scale from Maslach and Leiter (2008) was used to measure emotional exhaustion. A sample item was: “Work makes me feel physically and mentally exhausted.” The Cronbach’s alpha for this scale was 0.93.

A four-item scale from Wayne et al. (2004) was used to measure work–family enrichment. A sample item was: “Working well during the day makes me better at home in my role as a partner.” The Cronbach’s alpha for this scale was 0.82.

A five-item scale developed by Netemeyer et al. (1996) was used to measure work–family conflict. A sample item was: “My work demands interfere with my family and home life.” The Cronbach’s alpha for this scale was 0.90.

We measured family motivation with a five-item scale developed by Menges et al. (2017). A sample item was: “It is important to me to bring benefits to my family through my work.” The Cronbach’s alpha for this scale was 0.90.

We took into account the gender, age, marital status, education and job tenure of the employees as well as other factors. Prior research revealed that these demographic factors had an impact on how well employees balance work and family demands. Male was coded as “1” and female was coded as “2.” Education level (1 = middle school or below, 2 = high school, 3 = associate degree, 4 = bachelor’s degree and 5 = master’s degree or above); marital status (1 = married, 2 = unmarried and 3 = divorced); and job tenure (1 = less than 1 year, 2 = 1–5 years, 3 = 6–10 years, 4 = 11–15 years, and 5 = more than 16 years) were also coded.

3.3 Analysis strategy

To test the research hypotheses, we used a path analysis model. This method can test the hypothesized model as a whole because it can include multiple regression equations for testing, thus allowing the relationships between multiple independent variables and multiple dependent variables to be addressed simultaneously. In addition, we tested the mediating effects by estimating bias-corrected confidence intervals for the effect sizes at a 95% level using the parametric bootstrap procedure (with 20,000 Monte Carlo replications), as recommended by Preacher et al. (2010).

4. Findings

4.1 Confirmatory factor analysis

We used Mplus 8.3 to conduct confirmatory factor analysis (CFA) to evaluate the suitability of our measurement model. The outcomes showed that the proposed six-factor model fitted the data more accurately than any of the other models ($\chi^2 = 559.94$, $df = 309$, $\chi^2/df = 1.81$,

Models	χ^2	df	χ^2/df	CFI	TLI	RMSEA	SRMR
Six-factor model: SWB; PE; EE; WFC; WFE; FM	559.94	309	1.81	0.96	0.95	0.05	0.03
Five-factor model: SWB+PE; EE; WFC; WFE; FM	1005.64	314	3.20	0.89	0.87	0.08	0.08
Four-factor model: SWB+PE+WFE; EE; WFC; FM	1455.71	318	4.58	0.82	0.80	0.11	0.12
Three-factor model: SWB+PE+WFE; EE+WFC; FM	2292.70	321	7.14	0.68	0.65	0.14	0.15
Two-factor model: SWB+FM+PE+WFE; EE+WFC	3255.54	323	10.08	0.52	0.48	0.17	0.18
Single-factor model: SWB+FM+PE+WFE+EE+WFC	4608.93	324	14.23	0.30	0.24	0.20	0.22

Table 1. Results of the CFA of the measures of the variables used in the study

Notes: $N = 323$; SWB = employee stewardship behavior; PE = positive emotion; EE = emotional exhaustion; WFC = work–family conflict; WFE = work–family enrichment; FM = family motivation; CFI = comparative fit index; TLI = Tucker–Lewis index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual
Source: Table created by authors

CFI = 0.96, RMSEA = 0.05, SRMR = 0.03) (see Table 1). These findings imply that these factors can be empirically distinguished.

4.2 Test for common method bias

To mitigate the impact of CMB, this study implemented controls both in terms of measurement procedure and statistical methods. From a statistical standpoint, this study used Harman's single-factor test using SPSS version 26.0 to assess the presence of CMB. The analysis revealed six factors with eigenvalues greater than one. By considering the percentage of variance explained by the first unrotated principal component, we determined that it accounted for 26.94% of the variance, which is below the threshold of 40% commonly recommended as an indication of substantial common method variance. Therefore, these results suggest that CMB is not a significant concern in the data collected for this study.

4.3 Descriptive statistics

The descriptive statistics and correlations are shown in Table 2. The results showed that employee stewardship behavior is positively correlated with positive emotion ($r = 0.32$, $p < 0.01$) and emotional exhaustion ($r = 0.25$, $p < 0.01$). Positive emotion is negatively correlated with work–family conflict ($r = -0.27$, $p < 0.01$) and positively correlated with work–family enrichment ($r = 0.28$, $p < 0.01$). Emotional exhaustion is positively correlated with work–family conflict ($r = 0.40$, $p < 0.01$) and negatively correlated with work–family enrichment ($r = -0.33$, $p < 0.01$). Our research hypotheses are preliminarily supported.

4.4 Hypothesis testing

As shown in Figure 2, employee stewardship behavior positively predicted positive emotion ($\gamma = 0.35$, $p < 0.001$), whereas positive emotion was positively associated with work–family enrichment ($\gamma = 0.28$, $p < 0.001$) and was negatively associated with work–family conflict ($\gamma = -0.26$, $p < 0.001$). The mediating effects were further examined by using the parametric bootstrap procedure (with 20,000 Monte Carlo replications) as recommended by Preacher *et al.* (2010). The results showed that the indirect effect values of stewardship behavior

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Age											
2. Gender	0.04										
3. Education	-0.24**	0.06									
4. Marital status	-0.47**	0.01	0.19**								
5. Tenure	0.83**	0.03	-0.23**	-0.51**							
6. ESB	0.05	0.05	-0.15**	-0.18**	0.03	(0.82)					
7. PE	-0.04	0.03	-0.05	0.01	-0.08	0.32**	(0.95)				
8. EE	0.02	-0.07	0.03	0.00	-0.03	0.25**	-0.09	(0.93)			
9. WFC	0.03	-0.01	0.02	-0.02	0.04	-0.13*	-0.27**	0.40**	(0.82)		
10. WFE	0.06	0.02	-0.19**	-0.19**	0.05	0.40**	0.28**	-0.33**	-0.11	(0.90)	
11. FM	0.02	0.03	-0.12*	-0.00	-0.01	0.26**	0.16**	-0.21**	-0.30**	0.29**	(0.90)
<i>M</i>	31.54	1.57	3.10	1.59	2.57	4.04	3.75	2.86	2.97	3.37	4.07
<i>SD</i>	9.45	0.50	0.96	0.55	1.29	0.78	0.87	1.10	1.00	0.82	0.88

Notes: $N = 323$; * $p < 0.05$ and ** $p < 0.01$

Source: Table created by authors

Table 2.
Descriptive statistics
and correlations



affected work–family enrichment (estimate = 0.10, 95%CI [0.04, 0.17]) and work–family conflict (estimate = −0.09, 95%CI [−0.16, −0.04]) through positive emotion. In summary, *H1a* and *H1b* were supported.

As shown in Figure 2, employee stewardship behavior positively predicted emotional exhaustion ($\gamma = 0.27, p < 0.001$), whereas emotional exhaustion was positively associated with work–family enrichment ($\gamma = -0.35, p < 0.001$) and was negatively associated with work–family conflict ($\gamma = 0.41, p < 0.001$). The mediating effects were also examined by using the parametric bootstrap procedure with 20,000 Monte Carlo replications, revealing that stewardship behavior had indirect effects on work–family enrichment (estimate = −0.10, 95%CI [−0.145, −0.057]) and work–family conflict (estimate = 0.11, 95%CI [0.06, 0.17]) through emotional exhaustion. In summary, *H2a* and *H2b* were supported.

As shown in Figure 3, family motivation significantly moderated the relationship between positive emotion and work–family enrichment ($\gamma = 0.21, p < 0.01$). The interaction is shown in Figure 3, and the relationship between positive emotion and work–family enrichment was stronger when family motivation was high ($\gamma = 0.15, t = 3.05, p < 0.01$) than when family motivation was low ($\gamma = 0.03, t = 0.97, ns$). Therefore, *H3a* was supported.

As shown in Figure 4, family motivation significantly moderated the relationship between emotional exhaustion and work–family conflict ($\gamma = -0.17, p < 0.01$). The interaction is shown in Figure 4, indicating that the relationship between emotional exhaustion and work–family conflict was weaker when family motivation was high ($\gamma = 0.06, t = 2.12, p < 0.05$) compared

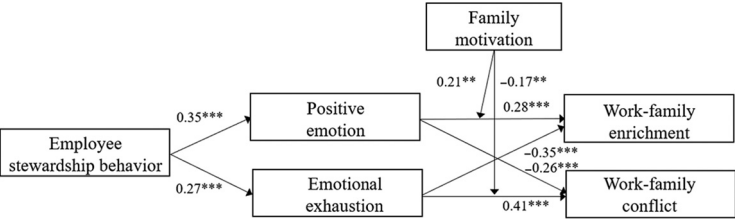
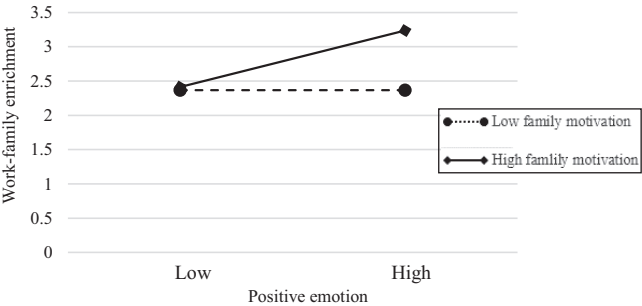


Figure 2.
Coefficient analysis of
the path model

Notes: This study presents only the main path coefficients of the full model (nonstandardized coefficients); * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$
Source: Figure created by authors

Figure 3.
Moderating effect of
family motivation on
the relationship
between positive
emotion and work–
family enrichment



Source: Figure created by authors

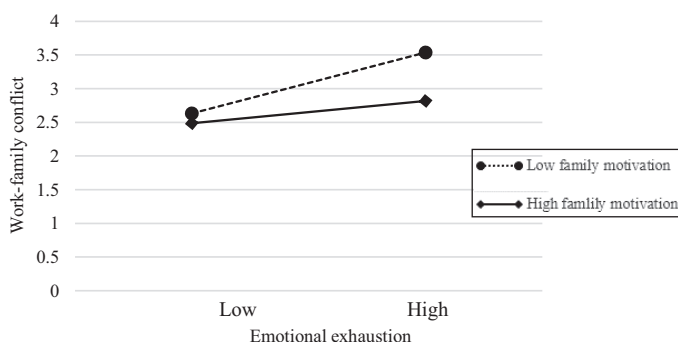
with when family motivation was low ($\gamma = 0.16, t = 3.51, p < 0.001$). The difference between the two groups was significant ($\Delta\gamma = -0.10, t = -2.36, p < 0.05$). Therefore, *H3b* was supported.

5. Conclusion and discussion

Based on COR theory, we developed a dual-path model and found that employee stewardship behavior has a dual effect on their work-family interface. Through resource generation (positive emotion) and resource depletion mechanisms (emotional exhaustion), we explored how stewardship behavior affects employees' work-family interactions and the moderating impact of family motivation on distinct mediating mechanisms. The results showed that stewardship behavior not only enhances employees' positive emotion through the resource generation function but also increases their emotional depletion through the resource depletion function, which results in a dual effect on employees' work-family interface. In addition, family motivation moderated the relationships between positive emotion and work-family enrichment, as well as emotional exhaustion and work-family conflict. These findings broaden the understanding of the family spillover effects of employee stewardship behavior and provide implications for interventions about employee stewardship behavior.

5.1 Theoretical implications

First, we adopted an actor perspective to examine the positive and negative effects of stewardship behavior on employees themselves, which helps people understand the dual effect of stewardship behavior comprehensively and advances the study of the consequences of employee stewardship behavior. Previous research has focused on the positive effects of supervisor stewardship behavior on their subordinates from a receiver perspective. For example, [Kuppelwieser \(2011\)](#) found that supervisor stewardship behavior significantly promotes subordinates' creativity. However, these studies have ignored the effects of stewardship behavior on the actors themselves and the potential negative effects ([Qian et al., 2022](#)). Given the important value of employee stewardship behavior for internet companies' recovery and development under the impact of the COVID-19 pandemic, it is crucial to examine how employee stewardship behavior affects their own work experiences, as the bright and dark sides of stewardship behavior are directly related to the sustainability of employees' pro-organizational behaviors. Therefore, we investigated both



Source: Figure created by authors

Figure 4.
Moderating effect of
family motivation on
the relationship
between emotional
exhaustion and
work-family conflict

the advantages and disadvantages of employee stewardship. Stewardship behavior brings both positive effects (positive emotion) and negative effects (emotional exhaustion) to employees themselves. This finding not only supports the theoretical perspective of the dual effect of employee stewardship behavior proposed in this study but also responds to the academic suggestion that paying attention to the dark side of pro-social behaviors (e.g. stewardship behavior) is necessary (Bolino and Grant, 2016).

Second, based on COR theory, we proposed and demonstrated a dual-path model of how stewardship behavior affects employees' work–family interface through the function of resource generation and resource consumption, advancing the study of the mechanisms by which stewardship behavior works. Although previous research has theorized that stewardship behavior affects individuals' work outcomes (Hernandez, 2012), few studies to date have provided insight into why engaging in stewardship behavior affects actors' work–family interface. This study found that stewardship behavior not only positively affects employees' work–family interface through the resource generation mechanism of positive emotion, but also negatively affects their work–family interface through the resource-depletion mechanism of emotional exhaustion. Henssen and Koiranen (2021) showed that engaging in stewardship behavior can promote CEOs' joy of working for the family firm. However, this study did not examine the resource consumption mechanism of stewardship behavior. In addition, Lin *et al.* (2016) found that some positive leadership behaviors (e.g. ethical leadership behavior) can deplete individuals' psychological resources and generate resource consumption. We thus integrated the two processes of resource generation and resource consumption by introducing COR theory and elucidating the dual effect of employee stewardship behavior on themselves. This approach provides a comprehensive explanation of the resource change process of employee stewardship behavior and advances the understanding of the black box between employee stewardship behavior and work–family interface.

Finally, we further explored the boundary condition under which employee stewardship behavior produces gains or costs, that is, the moderating role of family motivation. Most existing studies have focused on the moderating role of external resources (Qian *et al.*, 2022; Hammer *et al.*, 2013; Fan *et al.*, 2022), and less on the intrinsic motivation of individuals. Based on COR theory, this study revealed that individuals with high family motivation will improve the facilitative effect of positive emotion on work–family enrichment. In contrast, for individuals with low family motivation, the negative effect of emotional exhaustion on work–family conflict will be reinforced. This finding suggests that family motivation, as an important resource replenishment mechanism (Tariq and Ding, 2018), has a significant impact on the effects of stewardship behavior. In addition, given their strong family values, Chinese people will not only work hard to provide for their families but also report good news but not bad news to reduce family worries (Zhang *et al.*, 2020). Therefore, family motivation can enhance the benefits of stewardship behavior and reduce its potential costs.

5.2 Practical implications

For internet enterprises to recover and thrive in the crisis of the COVID-19 pandemic, stewardship behavior – a pro-organizational behavior – is of massive help. Previous research has called for organizations to motivate employee stewardship behavior strongly. Yet, this study found that employee stewardship behavior has a dual effect on themselves. Specifically, employee stewardship behavior brings positive emotion to themselves while also costing them in the form of emotional exhaustion. Therefore, when managers encourage or foster employee stewardship behavior in management practice, they need to pay attention to preventing and intervening in negative issues that may result from stewardship behavior.

Internet organizations should first create and execute policies that assist employees in obtaining a work–life balance. For example, companies can give employees greater autonomy at work and increase their sense of control over work hours (Williams *et al.*, 2016), which can further increase employees' perceptions of organizational support and help reduce the negative effects of engaging in stewardship behavior.

Second, companies can implement training programs that clearly explain the personal benefits of stewardship behavior (e.g. increased personal resources), which can motivate employees to actively engage in stewardship behavior. Given the negative impact of engaging in stewardship behavior, companies need to take steps to reduce the resource depletion of such pro-organizational behaviors. For example, companies can help employees gain additional resources from practicing stewardship behavior by including it in performance evaluations and offering financial rewards. More importantly, companies can provide psychological rewards to workers, such as praise and acknowledgment for proper behavior, which can swiftly replenish psychological resources. These measures will reduce or avoid resource depletion and mitigate the disadvantages that stewardship behavior brings to employees.

Finally, this study found that family motivation, as a key resource replenishment mechanism, would strengthen the beneficial influence of positive emotion on work–family enrichment and weaken the negative impact of emotional exhaustion on work–family conflict. Organizations thus can select employees who are highly motivated by their families during the recruitment process. In addition, by implementing family-supportive management practices, managers can support employees in creating harmonious family relationships and alleviate their concerns about engaging in stewardship behavior. This can promote work–family balance and lead to the mutually beneficial growth of organizations and employees.

5.3 Limitations and future research directions

This study has several limitations that provide opportunities for future research. First, the research sample was exclusively drawn from three internet companies in Southern China. This specific sampling framework might limit the breadth of our findings' applicability, considering that the organizational structures and work patterns prevalent in these companies may not accurately summarize the broader spectrum of industrial contexts. In addition, the unique context of the COVID-19 pandemic, particularly the lockdown phase during which this research was undertaken, could have distinctively influenced employees' perceptions and experiences of the work–family interface. Moreover, the specific sociocultural and economic environment of Southern China, characterized by unique work ethics and organizational norms, might have influenced the manifestation and implications of stewardship behavior in ways that are not fully representative of varied contexts. Recognizing these constraints, future research should aim to include a wider variety of industries, companies of different sizes and diverse cultural backgrounds. Using random sampling techniques could also enhance the representativeness of the sample. Moreover, exploring the effects of stewardship behaviors in different work environments, particularly comparing remote work postpandemic to traditional office settings, would deepen the understanding of our findings.

Second, the research data in this paper was collected through self-reporting, and participants' subjectivity is inevitable. Future studies can use a multidata source approach, such as inviting employees' spouses to provide additional data (e.g. work–family interface), to improve the robustness of the findings. Although a time-lagged approach can reduce CMB to

some extent, causal relationships between variables cannot be effectively inferred. Therefore, a longitudinal study design could be used to enhance causal inference in the future.

Third, we considered stewardship behavior as an interindividual variance variable and used an interindividual research design to examine its effects on employees' work–family interface. However, stewardship behavior and employee emotions may exhibit intraindividual dynamic characteristics, which can fluctuate daily (Koopman *et al.*, 2016; Lanaj *et al.*, 2016; Qin *et al.*, 2018). More importantly, these daily fluctuating changes have a significant impact on employees' work–family interface. Therefore, future research could use the experience sampling method to examine the role of changes in employees' resources on the relationship between daily stewardship behavior and daily work–family interface. This method would not only advance the study of stewardship behavior at the intraindividual level, but also expand the understanding of the dynamic properties of COR theory.

Fourth, although contributing to the welfare of others can be a valuable cause, it is important to recognize that not all causes result in benefits for others (Hernandez, 2012). Stewardship behavior often originates from organizations' pursuit of a meaningful cause, but it also involves economic and socioemotional components. It is crucial to understand that stewardship behavior is not a fixed characteristic but rather a situational choice influenced by various goals and contexts. Moreover, stewardship behavior driven by different motivations can have different impact on subsequent attitudes and behavior. For instance, if employees engaged in stewardship behavior for the sake of pursuing valuable causes realize that their sacrifices do not significantly contribute to others, they may choose to reduce their stewardship behavior or prioritize family connections over the organization and leave the firm. Therefore, future research can benefit from qualitative research designs that enable longitudinal tracking and interviewing of employees who engage in stewardship behavior. This approach would facilitate the analysis of the diversity of stewardship behavior expressions driven by various motivations in different situational contexts.

Finally, we focused on the effect of stewardship behavior on employees' work–family interface from the perspective of emotional resources. However, whether employees actively engage in stewardship behavior is heavily influenced by their leaders and colleagues (Le Breton-Miller and Miller, 2015), so future research can examine the impact mechanisms of stewardship behavior from a relational perspective. Moreover, this study only investigated the effect of employee stewardship behavior on work–family interface, without considering the reverse impact of family on work. In fact, the individual's ability to engage in active stewardship behavior is closely related to family support and family relationships. Future research could adopt a bidirectional framework to analyze how the work–family interface affects employee stewardship behavior.

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Influence of employees' perception of digital transformation meaning on work engagement and well-being

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Applying the perspective of sensemaking, in this study we examined the multiple mediating effects of employees' supportive intention for digital transformation and work engagement in the relationship between their perception of meaning in the digital transformation and their workplace well-being. Data were collected in two waves from a sample of 213 knowledge-based employees of a high-technology company located in southern China. The results showed that perceived digital transformation meaning enhanced employees' workplace well-being through motivating digital transformation supportive intention and work engagement. Digital transformation supportive intention and work engagement played a chain mediating effect between perceived digital transformation meaning and workplace well-being. These findings contribute to understanding of how perceived digital transformation meaning positively affects employees' work outcomes.

Keywords

perceived digital transformation meaning, digital transformation supportive intention, work engagement, workplace well-being, sensemaking

Article Highlights

- Employees' perception of digital transformation meaning was found to influence their supportive intention for the transformation.
- Employees who perceived the meaning of digital transformation reshaped their work attitudes and behaviors.
- Digital transformation had a potentially positive impact on employees.
- Employees' supportive intention for digital transformation and their work engagement had a chain mediating effect in the relationship between perceived digital transformation meaning and workplace well-being.

Digital technology is often used in companies to reduce operating costs and maintain sustainable growth (Wilson & Daugherty, 2018). Digital technology transformation has emerged as a crucial strategic option for companies to keep up their market competitiveness (Van Zeebroeck et al., 2021). Despite the widespread implementation of digital transformation strategies across companies, these endeavors are rarely successful (Graebner et al., 2017). The likely reason is that those implementing the transformation in the organization underestimate the essential role of the individual in the process (Cetindamar et al., 2021). In fact, digital transformation involves changes in all aspects of the organization, and requires organizational members to reach a consensus on the transformation and participate in it

proactively (Cetindamar et al., 2021). Therefore, to implement digital transformation smoothly, it is crucial that employees' positive perception of such transformations should be increased.

In the field of organizational behavior most research on digital transformation has centered on examining how transformation events influence employees' emotional state and job performance. For example, uncertainty caused by transformation events can increase employees' job insecurity, which is detrimental to their well-being (Petrou et al., 2018). However, researchers have paid less attention to employees' subjective perception of the gains and losses of transformation events, which has resulted in an incomplete understanding of the relationship between transformation events and employees' work outcomes (Rafferty & Jimmieson, 2017). In fact, the implementation of a digital transformation strategy can be significantly impacted by the cognitive processes that employees use to assess the benefits and drawbacks of adopting the transformation (Iyanna et al., 2022). Perceived digital transformation meaning is conducive to triggering employees' inclination to embrace the transformation, which will further enhance their performance and well-being (Ahmad et al., 2023). Applying the perspective of sensemaking, in this study we explored the potential positive effects of digital transformation on employees' workplace well-being.

According to the literature on organizational change (Lau & Woodman, 1995), employees' *perception of the meaning of digital transformation* refers to the extent to which they are aware of the purpose and importance of digital transformation. As an intrinsic motivator, work meaningfulness has a significant impact on employees' attitude and behavior, including job satisfaction, organizational commitment, and workplace well-being (Vogel et al., 2020). Employees who perceive that digital transformation is meaningful for the organization and themselves are likely to embrace the strategy actively and engage in the process, which will further enhance their well-being (Van Der Schaft et al., 2022). Consequently, perceived digital transformation meaning is a critical microlevel element for the successful execution of the transformation strategy (Iyanna et al., 2022).

We adopted sensemaking theory (Weick & Roberts, 1993) to explain the mediation effects of employees' digital transformation supportive intention and work engagement in the relationship between perceived digital transformation meaning and workplace well-being. Sensemaking theory was originally proposed as a framework for constructing organizational strategy to solve organizational crises (Weick & Roberts, 1993). Gioia and Thomas (1996) then applied this theory to the transformational situation to explore how individuals interpret the situations they are in, their previous experiences, and the situations they may face in the future, that is, the process of the formation of construction of meaning, and its influence on employees' work outcomes. According to sensemaking theory, employees who perceive the meaning of the digital transformation strategy will reshape their habits and mode generated in the workplace and will transform their attitude toward the digital transformation, leading to variation in workplace behaviors. Therefore, we expected that perceived digital transformation meaning would increase employees' intention to support the transformation. Furthermore, *work engagement* is defined as "the harnessing of organization members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances" (Kahn, 1990, p. 694). It has been shown that perceiving digital transformation meaning, as a key work resource, increases employees' work engagement (Orhan et al., 2021). Highly involved (vs. less involved) employees are likely to devote more resources to their job and achieve greater workplace well-being (Saks, 2006). Thus, we expected perceived digital transformation meaning to motivate employees' transformation supportive intention, which would then enhance their work engagement and workplace well-being.

Perceived Digital Transformation Meaning and Workplace Well-Being

There are many definitions of digital transformation in the extant literature (Vial, 2021; Warner & Wäger, 2019). We adopted the definition of Gurbaxani and Dunkle (2019): *Digital transformation* is the reinvention of the company—its vision and strategy, organizational structure, processes, capabilities, and culture—to meet the demands of the rapidly changing digital environment. The decision-making role and authority of leaders will be diminished through digital transformation (Verhoef et al., 2021), as digital technologies enable individuals to execute activities more rapidly (Zaoui & Souissi, 2020), such as estimating client demands using big data and the degree to which products and needs are aligned.



Workplace well-being refers to individuals' overall assessment of their workplace life quality based on their own personal standards (Zheng et al., 2015). A sense of professional responsibility fulfillment, job satisfaction, goal attainment, and happiness are considered to be indicators of workplace well-being (Acton & Glasgow, 2015). Despite inconsistent conclusions having been reported regarding whether digital transformation benefits employees (Rodriguez-Lluesma et al., 2021), in this study we proposed that perceived digital transformation meaning would have a positive impact on employees' workplace well-being. We reasoned that this would be so owing to the following previous research findings: Lau and Woodman (1995) noted that employees' cognition of organizational transformation includes their perception of its meaning. Employees will create explanations and expectations about the transforming consequences when an organization undergoes change. There are two independent cognitive processes about change events: sensemaking and cognitive bias. Employees develop cognitive biases and resistance to organizational change if they perceive additional risks and uncertainties from the transformation. However, a sensemaking process will occur if employees have complete understanding about the change and appreciate its usefulness to the development of themselves and the organization, which can boost employees' positive state in work (Gover & Duxbury, 2018). Accordingly, on the basis of the sensemaking path, we predicted that once employees perceived the meaning of digital transformation, they would start to have expectations that the transformation may increase their power, improve the tools in the workplace, and make tasks more convenient, as well as leading to the organization experiencing long-term development (Verhoef et al., 2021; Vial, 2021; Zaoui & Souissi, 2020). According to earlier research (Raziq & Maulabakhsh, 2015), all of these factors can increase workers' job satisfaction and help them embrace more positive feelings, which enhances their workplace well-being. Additionally, when employees perceive digital transformation as meaningful, their level of compatibility with the company also rises, which can further significantly enhance their workplace well-being (Treviño et al., 2020). Thus, we put forward the following hypothesis:

Hypothesis 1: Perceived digital transformation meaning will be positively related to employees' workplace well-being.

Mediating Role of Digital Transformation Supportive Intention

According to sensemaking theory (Weick & Roberts, 1993), when employees capture the transformation in an organization by virtue of language framing, behavior demonstration, and interactive feedback, they will assign meaning to the transformation (Gioia & Thomas, 1996). Subsequently their psychological cognition and behavior modes in the workplace will be reshaped. Accordingly, there may be a paradigm shift in employees' cognitive modes as they recognize the significance and value of digital transformation for the organization and themselves. It is of high relevance for researchers and practitioners to understand the psychological mechanisms that lead to employees' supportive intentions for digital transformation (Jimmieson et al., 2008). Such knowledge can help researchers to identify potential factors influencing employees' digital transformation support and how to manage digital transformation proactively. *Digital transformation supportive psychological states* are defined as positive attitudes and evaluations, and the willingness or intention to support digital transformation (Straatmann et al., 2018), and these states have been reflected in previous research by constructs such as readiness to change (Armenakis et al., 1993) and intention to support change (Jimmieson et al., 2008). Therefore, we believed that perceived digital transformation meaning would influence employees' workplace well-being through their digital transformation supportive intention.

A strong intention to support digital transformation will result from positive expectations for the change (Heim & Sardar-Drenda, 2021). When employees realize that digital transformation can increase their autonomy and power at work, as well as improve work tools and skills, they will embrace positive expectations for the transformation (Javed et al., 2013), such as achieving better performance and obtaining greater development opportunities for employees individually. Additionally, according to the principle of reciprocity (Cropanzano & Mitchell, 2005), when employees recognize that digital transformation is of benefit for them, they will show more intention to support it. Therefore, employees' perception that digital transformation is meaningful will enhance their supportive intention for the transformation.

Further, employees who are skilled at connecting with others and achieving win-win situations are more likely to be in a good mood than are those employees who do not have this skill and who do not achieve in this way (Wang et al., 2018).

Therefore, supporting digital transformation as a win–win strategy for the organization may enable employees to experience more pleasant emotions at work, which is a component of workplace well-being (Zou & Dahling, 2017). In addition, digital transformation supportive intention can motivate employees to reshape their work and improve their work performance (Parker et al., 2010), and the bolstering of this intrinsic motivation can enhance employees' satisfaction and workplace well-being (Fishbach & Woolley, 2022). Therefore, employees' digital transformation supportive intention will enhance their workplace well-being. As such, we proposed the following hypothesis:

Hypothesis 2: Digital transformation supportive intention will play a mediating role in the relationship between employees' perceived digital transformation meaning and workplace well-being.

Mediating Role of Work Engagement

According to sensemaking theory, external environment clues can reshape individuals' meaning construction in regard to organizational change and will affect their cognition and behavior mode (Maitlis, 2005). We anticipated that employees would react to perceived digital transformation meaning by increasing their work engagement, and their workplace well-being would then be enhanced. Therefore, we proposed that perceived digital transformation meaning could enhance employees' workplace well-being through increasing their work engagement.

On the one hand, employees may think that the decentralization of authority and advancement of work instruments brought about by digital transformation will make their work tasks easier and enable them to achieve greater autonomy in the workplace (Vial, 2021; Warner & Wäger, 2019). According to Santisi et al. (2018), these are features of the work environment that lower employees' use of psychological resources at work and increase their organizational identification, psychological security, and organizational commitment, all of which have been identified as antecedents of workplace well-being (Anglim et al., 2020).

On the other hand, researchers have established the beneficial effects of work engagement on workplace well-being (Hammedi et al., 2021). In particular, in comparison with their colleagues, those employees who are more engaged at work experience higher job satisfaction and have good feelings as well as a reduction in anxiety brought on by stressors (Meng & Berger, 2019), all of which are favorable indicators of workplace well-being. Additionally, strong work engagement predicts improved job performance and greater self-efficacy, both of which are crucial for boosting employees' workplace well-being (Basit, 2019). In light of the foregoing, we posited the following hypothesis:

Hypothesis 3: Work engagement will play a mediating role in the relationship between employees' perceived digital transformation meaning and workplace well-being.

Multiple Mediating Roles of Digital Transformation Supportive Intention and Work Engagement

According to sensemaking theory (Weick & Roberts, 1993), constructing meaning at all levels of the organization will reshape employees' attitude and behavior and is important for the success of change. How digital transformation affects employees depends largely on how they perceive the strategy to bring it about (Gioia & Thomas, 1996). Specifically, when employees realize the transformation is beneficial to themselves and to the organization, they will construct new cognitions about digital transformation and will modify their previous cognitive mode, thus generating a more supportive intention regarding digital transformation. Furthermore, this cognitive shift toward a greater willingness to support digital transformation can improve employees' behavior and psychological status in the workplace, that is, it can boost their work engagement and workplace well-being. Therefore, we proposed the following hypothesis:

Hypothesis 4: Employees' digital transformation supportive intention and work engagement will play a continuous intermediary role in the association between their perceived digital transformation meaning and workplace well-being.

The hypothesized model is shown in Figure 1.

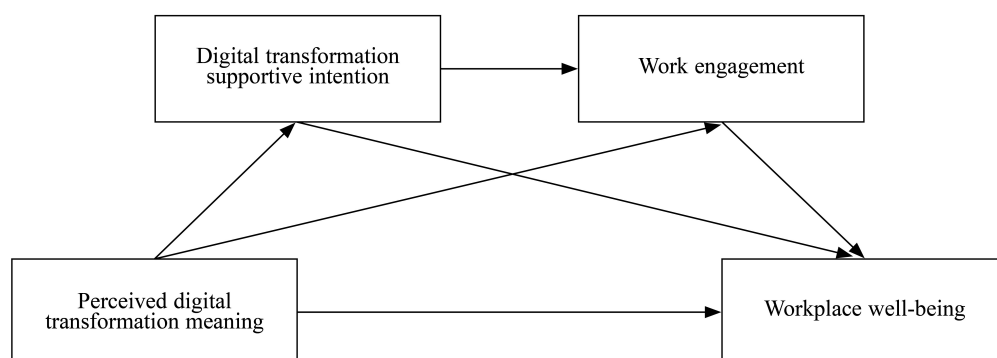


Figure 1. *Hypothesized Model*

Method

Procedure

We tested our hypotheses by conducting a survey with a sample of 213 knowledge-based employees of a high-technology company located in southern China. We used acquaintance social networks to recruit participants through snowball sampling. Potential participants were contacted through groups in the popular Chinese messaging application WeChat. After explaining the research purpose and assuring potential participants that the confidentiality of their responses would be protected, we sent each of them a link to our online survey, which was generated by survey company Wenjuanxing. To reduce the possibility of common method bias we conducted a two-wave survey with a 1-month interval between the waves. At Time 1 participants reported their perceived digital transformation meaning and digital transformation supportive intention, and provided demographic information (i.e., gender, age, education, and tenure). At Time 2, which was 1 month later, participants reported their work engagement and workplace well-being.

In the first wave of the survey (Time 1), we sent forms to 300 employees with the assistance of the company's human resource department. We received completed forms from 255 participants, yielding an 85% response rate. One month later (Time 2), we distributed forms to the 255 participants who had completed the survey in the first phase and 213 (83.53%) of them returned completed surveys.

Participants

The demographic information for the participants was as follows: 86 (40.38%) were women and 127 (59.62%) were men. As regards age, 22 (10.33%) were aged 25 years or below, 125 (59.69%) were aged between 26 and 30 years, 49 (23.00%) were aged between 31 and 35 years, 10 (4.69%) were aged between 36 and 40 years, and seven (3.29%) were aged 41 years or over. As regards educational level, three (1.41%) had an associate degree, 24 (11.27%) had a bachelor's degree, 184 (86.38%) had a master's degree, and two (0.94%) had a doctorate. In terms of tenure, 137 (64.32%) had worked at the company for less than 3 years, 52 (24.41%) for between 4 and 6 years, 11 (5.16%) for between 7 and 9 years, and 13 (6.10%) for more than 10 years.

Measures

All the measures used in this study were scales developed and validated in previous studies. The items were translated from English into Chinese by two psychology experts and then translated back into English by two English major

students, with inconsistencies discussed repeatedly until consensus was reached. To ensure that all the items were suitable and applicable to the research context, some minor modifications were made following suggestions made by three professors in relevant research. All measures were scored using a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*).

Perceived Digital Transformation Meaning

Perceived digital transformation meaning was assessed using a three-item scale developed by Lau and Woodman (1995). A sample item is “I think digital transformation is meaningful and necessary for the company.” Cronbach’s alpha in our study was .93.

Digital Transformation Supportive Intention

Digital transformation supportive intention was measured using a four-item scale developed by Straatmann et al. (2018). A sample item is “I am willing to participate actively in digital transformation.” Cronbach’s alpha in our study was .92.

Work Engagement

Work engagement was measured using the nine-item scale developed by Schaufeli et al. (2006), which includes three dimensions: vigor, dedication, and absorption. Sample items are “At my work, I feel bursting with energy” (vigor), “I find the work that I do full of meaning and purpose” (dedication), and “I feel happy when I am working intensely” (absorption). Cronbach’s alpha in our study was .93.

Workplace Well-Being

Workplace well-being was measured using the six-item scale developed by Zheng et al. (2015). A sample item is “I find real enjoyment in my work.” Cronbach’s alpha in our study was .93.

Control Variables

We controlled for the following variables: gender (1 = male, 2 = female), age (1 = 25 years or under, 2 = 26–30 years, 3 = 31–35 years, 4 = 36–40 years, 5 = 41 years or over), educational level (1 = associate degree, 2 = bachelor’s degree, 3 = master’s degree, 4 = doctorate), and tenure (1 = 1–3 years, 2 = 4–6 years, 3 = 7–9 years, 4 = 10 years or more).

Results

Confirmatory Factor Analysis

Confirmatory factor analysis was used to test the construct validity of the study variables: perceived digital transformation meaning, digital transformation supportive intention, work engagement, and workplace well-being. The baseline four-factor model yielded a good fit to the data, chi-square/degrees of freedom ratio (χ^2/df) = 2.17, comparative fit index (CFI) = .94, incremental fit (IFI) = .94, root mean square residual (RMR) = .08, and root mean square error of approximation (RMSEA) = .07. The fit was better than that of either the three-factor model, χ^2/df = 4.68, CFI = .81, IFI = .81, RMR = .22, RMSEA = .13; the two-factor model, χ^2/df = 6.45, CFI = .71, IFI = .71, RMR = .25, RMSEA = .16; or the single-factor model, χ^2/df = 8.57, CFI = .59, IFI = .59, RMR = .19, RMSEA = .19.

Descriptive Statistics and Correlation Analysis

Means, standard deviations, and correlations of the study variables can be seen in Table 1. Workplace well-being was positively related to perceived digital transformation meaning, digital transformation supportive intention, and work engagement. Both perceived digital transformation meaning and digital transformation supportive intention were positively related to work engagement, and perceived digital transformation meaning was also positively related to digital transformation supportive intention.

Table 1. Descriptive Statistics and Correlations of Study Variables

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Gender	1.600	0.49								
2. Age	2.320	0.85	-.05							
3. Education	2.870	0.40	-.08	-.03						
4. Tenure	1.530	0.85	.04	.66**	-.03					
5. Perceived digital transformation meaning	4.258	1.11	.03	-.13	-.14*	-.10	(.79)			
6. Digital transformation supportive intention	4.561	0.93	.05	-.16*	.04	-.11	.22**	(.77)		
7. Work engagement	4.409	1.13	.06	-.17*	-.23**	-.08	.34**	.29**	(.58)	
8. Workplace well-being	4.580	0.97	.08	-.14*	-.11	.00	.31**	.27**	.31**	(.54)

Note. Cronbach's alpha values are shown in parentheses on the diagonal.

* $p < .05$ (two tailed). ** $p < .01$ (two tailed).

Hypothesis Testing

In Hypothesis 1 we predicted that perceived digital transformation meaning would be positively related to workplace well-being. The multivariate regression analysis results indicated that the positive association between perceived digital transformation meaning and workplace well-being was significant (see Model 2, Table 2). Thus, Hypothesis 1 was supported.

We predicted that digital transformation supportive intention would play a mediating role in the relationship between perceived digital transformation meaning and workplace well-being (Hypothesis 2). Regression analysis results showed that both perceived digital transformation meaning (see Model 2 of Table 2) and digital transformation supportive intention (see Model 3 of Table 2) had positive correlations with workplace well-being. After adding digital transformation supportive intention into Model 2 of Table 2, the positive association between perceived digital transformation meaning and workplace well-being showed a decline (see Model 5 of Table 2), indicating that digital transformation supportive intention partially mediated the positive relationship between perceived digital transformation meaning and workplace well-being, which supported Hypothesis 2.

Table 2. Regression Results for Workplace Well-Being

	Workplace well-being				Model 5	Model 6	Model 7
	Model 1	Model 2	Model 3	Model 4			
Gender	.06	.05	.05	.05	.04	.05	.04
Age	-.23*	-.20*	-.20*	-.18*	-.18*	-.17	-.16
Education	-.11	-.07	-.12	-.04	-.08	-.03	-.05
Tenure	.15	.16	.15	.13	.16	.15	.15
PDTM		.29***			.24***	.22**	.20**
Digital transformation supportive intention			.26***		.21**		.17*
Work engagement				.28***		.21**	.16*
R^2	.03	.10	.09	.10	.14	.14	.16
F	2.58*	5.94***	5.22***	5.47***	6.80***	6.56***	6.68***

Note. PDTM = perceived digital transformation meaning.

* $p < .05$ (two tailed). ** $p < .01$ (two tailed). *** $p < .001$ (two tailed).

In Hypothesis 3 we proposed that work engagement would also mediate the relationship between perceived digital transformation meaning and workplace well-being. There was a positive association between perceived digital transformation meaning and work engagement (see Model 4 of Table 3), and work engagement also had a positive association with workplace well-being (see Model 4 of Table 3). After adding work engagement into Model 2 of Table

3, the positive association between perceived digital transformation meaning and workplace well-being declined (Model 6 of Table 3), which implies that work engagement partially mediated the positive relationship between perceived digital transformation meaning and workplace well-being, which supported Hypothesis 3.

Table 3. Regression Results for Perceived Digital Transformation Meaning and Work Engagement

	DTSI		Work engagement			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Gender	.04	.04	.03	.02	.01	.01
Age	-.13	-.11	-.20*	-.17*	-.16	-.14
Education	.04	.07	-.24***	-.20**	-.25***	-.21*
Tenure	-.03	-.02	.04	.05	.05	.06
Perceived digital transformation meaning		.21**		.30***		.25***
Digital transformation-supportive intention					.28***	.23***
R^2	.01	.05	.07	.15	.14	.20
F	1.48	3.20**	4.96*	8.62***	8.06***	9.69***

Note. DTSI = digital transformation supportive intention.

* $p < .05$ (two tailed). ** $p < .01$ (two tailed). *** $p < .001$ (two tailed).

Hypothesis 4 pertains to the chain mediating effects of digital transformation supportive intention and work engagement on the relationship between perceived digital transformation meaning and workplace well-being. Regression analysis results showed that after adding digital transformation supportive intention and work engagement into Model 2 of Table 3, the positive association between perceived digital transformation meaning and workplace well-being declined (see Model 7 of Table 3). Therefore, Hypothesis 4 was supported.

Discussion

Drawing upon sensemaking theory, in this study we focused on employees' subjective perception of digital transformation and used a two-wave research design to explore the influencing mechanisms of perceived digital transformation meaning on employees' workplace well-being. The results show that perception of digital transformation meaning positively affect workplace well-being through both digital transformation supportive intention and work engagement. Digital transformation supportive intention and work engagement have a chain mediating effect on the link between perceived digital transformation meaning and workplace well-being. In other words, employees' perception of the significance of the digital transformation might boost their intention to support it, which will then further improve their work engagement and workplace well-being.

Theoretical Implications

There are several theoretical implications of this study. First, we confirmed the importance of employees' subjective perception of digital transformation meaning. Previous studies have mostly concentrated on the effects of digital transformation on employees as a whole (Weber et al., 2022), and have ignored the distinctive roles that different dimensions of digital transformation perform. According to earlier research, change events may threaten employee well-being because of increased uncertainty (Gonzalez et al., 2022). The results in our study indicate that employees' desire to embrace digital transformation may grow when they believe it to be meaningful for themselves, which will improve their work engagement and workplace well-being. This finding also responds to the call by Loretto et al. (2010) for research attention to be paid to employees' subjective perception of organizational change.

Second, we explored the positive effects of employees' subjective perception of meaning in the transformation situation. The environmental instability and changing job content that occur in digital transformation make it likely that employees will experience unpleasant feelings (Modlirski et al., 2023). However, from the perspective of sensemaking,



we have added to the body of research on employee well-being by taking into account that employees' perception of digital transformation meaning may be leveraged as a key work resource to enhance their workplace well-being.

Third, applying sensemaking theory, we constructed a chain mediating model to assess how perceived digital transformation meaning affects employees' workplace well-being. Employees' perception of digital transformation meaning as a key work resource will motivate them to participate in the transformation, and then enhance their work engagement and workplace well-being. In this research we have demonstrated that even if there may be a variety of uncertainties brought on by digital transformation, employees' subjective perception of what digital transformation means to them may be turned into valuable work resources that, in turn, benefit the employees (Van Der Schaft et al., 2022).

Practical Implications

The main practical implications of this study are as follows: First, the results show that employees benefit from perceiving that digital transformation is meaningful. This offers managers helpful insights to drive employees' initiative for digital transformation. When employees are fully informed about digital transformation and understand its significance they will be more open to accepting the enterprise's digital transformation strategy, and their resistance to digital transformation will reduce even though large-scale transformation may make them feel uneasy.

Second, we explored how digital transformation positively affects employees from the perspective of sensemaking. Perceived digital transformation meaning is a crucial work resource that can increase employees' motivation to support the change, which will then improve their work engagement and workplace well-being. Therefore, managers should pay attention to employees' cognitive and emotional changes, and send positive signals during the digital transformation process.

Limitations and Future Research Directions

This study has several limitations. First, the research data were collected by self-reporting and participants' subjectivity is inevitable. Although our data were collected at two time points, the findings on causality of the observed relationships need to be further strengthened. Second, we focused only on perceived digital transformation meaning and examined how this affected employees' workplace well-being. In forming perceptions of a change event, employees also take into account other factors, such as change impact, change intensity, change outcomes, and personal control. Therefore, to gain a comprehensive understanding of digital transformation, future researchers could further explore the effects of other cognitive dimensions of digital transformation. Finally, we focused on the impact of perceived digital transformation meaning on employees' workplace well-being and the mechanisms behind this relationship, without considering the moderating effects. The boundary conditions that are important for assisting managers in successfully implementing digital transformation strategies can be further investigated in future research.

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非体面工作者矛盾职业认同的转化机制 及其对职业转换意愿的影响研究

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摘 要 以往研究普遍认为矛盾职业认同是一种反常的认同状态,对从业者身心健康与绩效表现存在普遍的负面影响。本研究挑战既往研究关于矛盾职业认同负面效应的预设,认为非体面工作者矛盾认同兼具消极和积极的复杂影响后效。本研究通过 530 份医院护工的数据发现,当护工在工作过程中获得他尊,矛盾职业认同会转向过度职业认同,进而降低职业转换意愿;当护工在工作过程中遭遇职业歧视,矛盾职业认同则会转向过度职业不认同,进而提高职业转换意愿。本研究证实矛盾职业认同如何影响从业者的职业转换意愿主要取决于矛盾状态的转化,这对组织完善底层工作群体管理提供了启发。

关键词 非体面工作;矛盾职业认同;他尊获得;过度职业认同;职业歧视;过度职业不认同;职业转换意愿

1 引言

在我们的日常生活中,存在一些苦、累、脏及地位不高的工作,这些工作因有悖于社会关于“洁净”的标准而被认为是非体面的(张光磊等, 2021)。非体面工作(又称“肮脏”工作)是指那些具有一定危险性、社会公众所贬低或令人感到不悦等特征的工作总称(Ashforth & Kreiner, 1999)。例

如,照料病人的医院护工、捍卫生命最后尊严的入殓师等。现实中,非体面工作的特性对相关职位的招聘、留用等人力资源管理实践造成较大困难,普遍存在“用工难”和高流动率问题。非体面工作在劳动力市场一直处于边缘化地位,存在严重的劳动力供给不足(季浩等, 2022; 于晓彤等, 2019; 张燕, 李贵卿, 2017)。以医院护工这一典型的非体面工作为例,根据国家卫生健康委员会医政医管局发布的有关数据显示,目前我国失能、半失能老人超过 4,000 万,但现有养老护理专业从业人员仅 30 万,存在巨大的供给缺口。护理工作脏污的工作环境和职业的污名压力,是导致从业者转行、求职者抗拒的重要原因(Roitenberg, 2020)。然而,非体面工作是社会正常的功能运转所必需的,对社会具有十分重

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要的社会价值（王红丽等，2022）。因此，如何维持非体面工作群体的稳定性并降低其职业转换率，具有重要的现实意义。

职业是个体积极身份认同和存在价值的重要来源（van Dick & Kerschreiter, 2016），非体面工作者的身份认同问题一直是学界关注的重点。非体面工作者时常会面对一个共同的来自主流社会价值观的质疑，即“你怎么能从事这种工作”（Ashforth & Kreiner, 1999）。外部观察者眼中的“污损形象”使他们面临严重的身份认同威胁。然而，大部分从业者受迫于养家糊口的压力和外部有限的工作机会而选择长期从业（王红丽等，2022）。他们不得不认同自身职业，因为不认同和远离工作中的自我容易产生认知失调（Costas & Fleming, 2009）。因此，非体面工作者很难处于有意识的认同或不认同选择的两端，对自身职业或多或少持有矛盾心理（Ashforth & Kreiner, 1999; Kreiner et al., 2006; Shepherd et al., 2022）。矛盾职业认同是指个体对自身职业同时保持高认同和高不认同，反映了从业者对自身职业的复杂心理（Mixed Feelings, Ashforth et al., 2013）。值得注意的是，矛盾职业认同是一种不稳定的状态，外部情景因素容易使矛盾职业认同转向过度认同抑或过度不认同（Vadera & Pratt, 2013）。过度职业认同是指个体对自身职业保持高认同和低不认同，而过度职业不认同则指个体对自身职业保持低认同和高不认同（Dukerich et al., 1998）。换言之，矛盾职业认同、过度职业认同、过度职业不认同反映了从业者不同职业认同状态的组合。以往研究普遍认为，矛盾职业认同会对员工工作态度和行为产生负面影响，如提高职业转换意愿、职业倦怠等（Ashforth et al., 2013, 2014; Ciampa et al., 2018, 2021）。然而，非体面工作者身份认同过程及其心理反应较为复杂，会受到环境、组织、个体等多重因素的影响（Petriglieri et al., 2019）。因此，探讨非体面工作者矛盾职业认同的转化机制及其对职业转换意愿的影响具有重要的

意义。理论上，挑战了既往研究将矛盾职业认同影响后效简单等同于职业不认同的预设；实践上，为如何激发矛盾职业认同积极作用并规避其负面影响提供了启发。

矛盾职业认同本质上体现的是一种矛盾思维，悖论理论恰恰提供了解释矛盾思维存在的根本性原因和动态变化过程（刘智强等，2021）。悖论起源于相互依赖要素间的持续矛盾，并存在于作用方向相反要素间形成的张力关系中（Smith & Lewis, 2011）。张力反映了个体所面对的无法相容诉求的程度，而外部因素促使张力的状态发生变化。此外，矛盾放大理论（Ambivalence-Amplification Theory）认为，个体矛盾心理可以通过形成过度积极或过度消极的态度来解决，而外部情境刺激会决定矛盾心理转变的方向（史烽等，2021; Ali et al., 2017; Durand & Vergne, 2015; Katz & Glass, 1979）。一般而言，个体之间对于自身职业的认同和不认同程度存在较大差异，有时甚至达到功能失调的程度。本研究推断，在外部情景因素的刺激下，非体面工作者的矛盾职业认同状态会发生变化。具体而言，从业者在工作过程中经历积极事件，矛盾职业认同可能会转向过度职业认同；反之，从业者在工作过程中遭遇消极事件，从业者的矛盾职业认同则会转向过度职业不认同。此外，不同职业认同状态将对从业者职业转换意愿将产生差异化影响（Ashforth et al., 2013; Lai et al., 2013; Schaubroeck et al., 2018）。如 Ashforth 等（2013）证实职业认同会显著降低从业者职业转换意愿；而 Schaubroeck 等（2018）则发现非体面工作感知会诱发从业者职业不认同，进而提高其职业转换意愿。

综上所述，本研究重点探讨非体面工作者矛盾职业认同的转化机制及其对职业转换意愿的影响。首先，受不同情景因素的影响，持有矛盾心理的个体将放大自身的认知和情感反应，进而产生不同的行为倾向；其次，考察矛盾职业认同影响从业者职业转换意

愿的作用机制,指出过度职业认同抑或过度职业不认同是矛盾职业认同产生差异化影响后效的重要路径;最后,探讨非体面工作者矛盾职业认同何时发挥积极或消极影响,指明矛盾职业认同发挥作用的边界条件。

2 理论基础与研究假设

2.1 矛盾职业认同和他尊获得的交互作用与过度职业认同

当非体面工作者对自身职业持有矛盾认同的态度时,他们要么选择离开现属职业要么努力寻求工作意义,以减缓自身的认知失调(van Dick & Kerschreiter, 2016)。换言之,非体面工作者矛盾职业认同可能不是一种稳定的状态。矛盾放大理论认为,处于矛盾状态的个体在外部情景的刺激下,会转变为过度积极或过度消极的态度,进而影响其行为倾向。就医院护工而言,他们时常处于职业污名与职业价值之间摇摆,对职业自身职业持有一种矛盾的心理(王红丽等, 2022)。然而,外部情景因素的刺激可能使从业者对自身职业的认同状态发生改变。具体而言,当医院护工在过程获得积极的情景刺激(如获得病人或家属的尊重),会激发从业者重新看待这份“有损身份的职业”,积极寻求工作的意义(Hennekam et al., 2020),此时会强化从业者职业认同的因素,导致其自我与职业融合的认知倾向。他尊获得意指个体在工作过程中对他人尊重的总体感知(Ng, 2016)。他尊获得作为工作过程中的积极事件,是一种重要的资源补充机制,有助于提升员工的职业自豪感(李月调, 谢朝武, 2019)。本研究认为,如果护工获得病人或家属的认可和尊重,有助于让护工意识到自身工作对于他人和社会的意义,以更加积极的眼光看待自身的职业。因此,当医院护工经历他尊获得这类积极情景事件,矛盾职业认同可能会转向过度职业认同。基于此,本研究提出以下研究假设:

假设1: 矛盾职业认同和他尊获得的交互作用对过度职业认同有正向影响。

2.2 过度职业认同与职业转换意愿

离职倾向是指个体在一定时期内变换其工作或职业的可能性(Kalemci Tuzun & Arzu Kalemci, 2012)。在非体面工作情景中,从业者主要想通过离职改变自身职业身份。与以往相关研究保持一致(Lai et al., 2013; Schaubroeck et al., 2018),本研究重点聚焦于探讨医院护工是否有离开自身职业而非所属组织的倾向。个体通常受雇于组织而从事某个职业,而职业身份界定职业成员如何被定义,包括他们的工作任务、职业话术、价值观、目标、知识以及技能等(Ashforth et al., 2008; Meisenbach, 2008)。职业认同是指个体将职业身份内化为有效自我定义的程度,认同不仅仅是一种表面的社会分类,而是一种发自内心的感觉,即反映出“我是谁”(Ashforth et al., 2013)。Ashforth等(2013)认为,对于高职业认同的个体,他们更可能将遵守职业规范视为自身身份的表达。相关的实证研究也表明,不管是组织认同还是职业认同,都会降低员工的离职倾向(Edwards & Peccei, 2010; Reiche, 2009; van Knippenberg & van Schie, 2000)。此外,也有学者认为职业污名反而会刺激从业者塑造有意义的职业意识形态,并提高群体凝聚力(张光磊等, 2020; Ashforth & Kreiner, 1999, 2014; Ashforth et al., 2007)。这有助于非体面工作者建构积极的自我概念,藉此形成职业认同的基础。职业认同作为一种积极的自我定义,有助降低从业者的职业转换意愿。综上,本研究提出以下研究假设:

假设2: 过度职业认同在矛盾职业认同与他尊获得交互作用和职业转换意愿之间起中介作用。

2.3 矛盾职业认同和职业歧视的交互作用与过度职业不认同

根据矛盾放大理论,外部情境刺激会决定哪一种认知倾向的出现,而外部消极因素是促使矛盾职业认

同向过度职业不认同转变的重要催化因素 (Vadera & Pratt, 2013)。对于非体面工作者而言,当他们在工作过程中遭致消极的情景刺激(如遭遇他人职业歧视),会加剧他们对自身职业的污名感知,并诱发高工作压力(张燕,李贵卿,2017; Ashforth & Kreiner, 2014; Terskova & Agadullina, 2019)。有关“污名化”的研究也发现,那些认为自己遭遇污名压力的个体,会以一种更具防御性的方式应对污名化线索(Major & O'Brien, 2005)。当从业者经历职业歧视时,他们通常会采取适应不良的应对策略,从而强化对自身工作角色的负面评价(王玉梅等,2022; Bosmans et al., 2016)。此外,职业歧视主要源于社会公众对职业身份有悖于主流价值判断形成的特定偏见(蒋昀洁等,2020),遭遇职业歧视往往使其减少社会交往,进一步导致社会资源的丧失(Barclay & Markel, 2007)。因此,如果护工在工作过程经常遭遇职业歧视这类消极事件,会加剧他们对自身职业的负面认知,致使矛盾职业认同转向过度职业不认同。基于此,本研究提出以下研究假设:

假设 3: 矛盾职业认同和职业歧视的交互作用对过度职业不认同有正向影响。

2.4 过度职业不认同与职业转换意愿

尽管非体面工作者可以选择不同意自身职业,以缓解职业污名的负面影响,但不认同往往需要付出认知、情感和行为等方面努力(Elsbach & Bhattacharya, 2001)。对于非体面工作者而言,职业污名会促使从业者在认知、情感方面与自身职业保

持距离,但他们又不得不将大量的时间投入到自身工作之中,这种态度和行为的失衡会造成严重的心理张力。因此,职业不认同的状态可能难以长期维持(Lai et al., 2013)。职业不认同导致态度和行为间的失衡,容易使非体面工作者产生认知失调。此时,个体有动力改变其态度或行为,以恢复平衡和减少认知失调。当个体面对外部威胁时,个体流动(Individual Mobility)是一个重要的应对策略(Tajfel & Turner, 1986)。因此,当从业者不认同自身职业时,往往会选择离开现属职业(Schaubroeck et al., 2018)。此外,Swann Jr 等(2009)的研究综述发现,当个体心理上极度不认同自身职业时,会导致低情感承诺和低工作幸福感,进而提高职业转换意愿。综上,本研究提出以下研究假设:

假设 4: 过度职业不认同在矛盾职业认同与职业歧视交互作用和职业转换意愿之间起中介作用。

综上,本研究的理论模型如图 1 所示。

3 研究方法

3.1 研究样本

本研究以华南、华中及华北地区的在职医院护工为调查对象。作者首先通过社会关系网络与护理公司领导、医院护工管理者建立联系,详细介绍研究目的,并承诺对调查数据进行完全保密。在获得护理公司领导、医院护工管理者的支持和配合后,研究者相继获得了护工的联系方式,并与他们建立了联系。

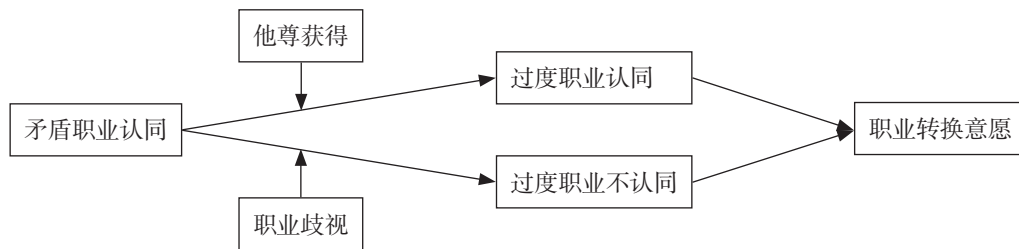


图 1 本研究的理论模型

首先,作者对多名医院护工进行访谈。发现部分护工认为自己的工作不是很体面,社会大众会低看她们。然而大部分护工对自身工作持有一种模棱两可的态度,尽管她们并未完全认同自身工作,但也认为护工工作有其意义和价值,为了生活也愿意长期从业。因此,本文基于非体面工作情景,聚焦于从业者“矛盾职业认同”这一核心议题。其次,问卷发放尽量利用护理公司人力资源培训、线上或线下集体会议的契机,由事先联系好的管理者向护工发放纸质问卷或电子问卷,得益于管理者的大力支持,护工对此次调研给予了积极回应,每位受访者在填答完问卷后会获得20元的“红包”奖励。调研的实施过程分为2个阶段,第一个阶段由护工填写矛盾职业认同、他尊获得、职业歧视及人口统计变量的调查问卷。两周后开始第二阶段调查,研究者邀请上一阶段完成问卷的护工继续参与调研,此阶段问卷调查的变量包括过度职业认同、过度职业不认同、职业转换意愿。在剔除不满足配对要求或答案呈现明显规律的无效问卷后,共获得来自华南、华中和华北地区8家医院的530份匹配有效问卷。

从调查的样本的总体分布来看,女性护工占94.9%;婚姻方面,以已婚为主,已婚占97.0%;年龄方面,护工年龄偏大,40岁以上占88.7%;学历方面,护工学历普遍偏低,高中以下占91.1%;工作年限方面,护工总体上从业经验比较丰富,从业10年以上占54.5%;收入水平方面,护工的收入一般,7000元以下占89.6%。

3.2 测量工具

本研究所采用的测量量表均来自国外主流期刊已发表的文献,并且大多已在中国情境下得到较好的验证。除控制变量外,其余量表均采用五点量表。

矛盾职业认同:采用Ashforth等(2013)开发的量表对矛盾职业认同进行测量,该量表共包括3个题项,示例条目包括“我对护工这个职业有很复杂的感情”。该量表的Cronbach's α 值为0.853。

他尊获得:采用Ng(2016)开发的量表对他尊获得进行测量,该量表评估了护工在工作过程中获得病人或家属尊重程度的总体看法。共包括5个题项,示例条目包括“大多数病人或家属是尊重我们的”。该量表的Cronbach's α 值为0.868。

过度职业认同:根据Ashforth等(2013)开发的职业认同量表进行改编。相较于职业认同,过度职业认同的情感更为强烈,该量表共包括3个题项,示例条目包括“我很感兴趣别人如何看待我们的职业”。该量表的Cronbach's α 值为0.779。

职业歧视:采用Schaubroeck等(2018)开发的量表对职业歧视进行测量,该量表共包括5个题项,示例条目包括“干我们这一行的人常常被别人低看一等”。该量表的Cronbach's α 值为0.883。

过度职业不认同:根据Ashforth等(2013)开发的职业不认同量表进行改编。相较于职业不认同,过度职业不认同的情感更为强烈,该量表共包括4个题项,示例条目包括“在外人面前,我不说自己是从事护工职业的”。该量表的Cronbach's α 值为0.815。

职业转换意愿:采用Schaubroeck等(2018)开发的量表对职业转换意愿进行测量,该量表共包括4个题项,示例条目包括“未来一年我可能会从事新的职业”。该量表的Cronbach's α 值为0.810。

控制变量:参照相关研究(Lai et al., 2013; Schaubroeck et al., 2018),本研究将受访者性别、婚姻、年龄、学历、工作年限、收入作为控制变量。对控制变量的编码为:性别为1=男,2=女;婚姻方面,0=未婚/离异/丧偶,1=已婚;年龄方面,1=“30岁及以下”,2=“31~40岁”,3=“41~50岁”,4=“51~60岁”,5=“60岁及以上”;学历方面,1=小学及以下,2=初中,3=高中或中专,4=大专及以上;工作年限方面,1=“1年以下”,2=“1~5年”,3=“6~10年”,4=“11~15年”,5=“16年及以上”;收入水平方面,1=“4000元及以下”,2=“4000~7000元”,3=“7000~10000元”,4=“10000元及以上”。

4 研究结果

4.1 区分效度与验证性因子分析

为了考察矛盾职业认同、他尊获得、过度职业认同、职业歧视、过度职业不认同、职业转换意愿这 6 个变量的区分效度，我们对测量数据进行验证性因子分析。由表 1 可知，相较于其他 6 个模型，六因子模型的拟合效果最好（ $\chi^2/df=2.240$, CFI = 0.947, TLI = 0.939, RMSEA = 0.048, SRMR = 0.035），这说明本研究的 6 个变量（矛盾职业认同、他尊获得、

过度职业认同、职业歧视、过度职业不认同、职业转换意愿）具有良好的区分效度。

4.2 描述性统计分析

各变量的均值、标准差和相关系数如表 2 所示。矛盾职业认同与过度职业认同（ $r=0.396, p<0.001$ ）、过度职业不认同（ $r=0.345, p<0.001$ ）为显著正相关；过度职业认同与职业转换意愿为显著负相关（ $r=-0.408, p<0.001$ ）；过度职业不认同与职业转换意愿为显著正相关（ $r=0.354, p<0.001$ ）。上述结果为研究假设提供了初步支持。

表 1 区分效度检验结果

模型	χ^2	df	χ^2/df	$\Delta\chi^2 (\Delta df)$	CFI	TLI	RMSEA	SRMR
六因子模型（A, B, C, D, E, F）	597.570	237	2.521	-	0.943	0.934	0.054	0.034
五因子模型（A, B + C, D, E, F）	1369.054	242	5.657	771.484（5）***	0.822	0.797	0.094	0.094
四因子模型（A, B + C, D + E, F）	2101.805	246	8.544	1504.235（9）***	0.707	0.671	0.119	0.122
二因子模型（B + C, A + D + E + F）	3191.301	251	12.714	2593.731（14）***	0.535	0.489	0.149	0.146
单因子模型（A + B + C + D + E + F）	4374.480	252	17.359	3776.910（15）***	0.348	0.286	0.176	0.178

注：N = 540, ***p < 0.001。A, B, C, D, E, F 分别矛盾职业认同、他尊获得、过度职业认同、职业歧视、过度职业不认同、职业转换意愿；“+”代表两个因子为合并状态。

表 2 各变量的均值、标准差及相关系数矩阵

变量	1	2	3	4	5	6	7	8	9
1. 性别									
2. 婚姻	-0.041								
3. 年龄	-0.097*	0.040							
4. 教育	-0.020	0.022	-0.143**						
5. 工作年限	-0.005	0.049	0.227***	-0.188***					
6. 收入	-0.017	0.023	-0.019	0.048	0.158***				
7. 矛盾职业认同	0.027	-0.033	-0.207***	0.134**	0.105*	0.251***	0.853		
8. 他尊获得	0.011	-0.039	0.004	0.054	-0.020	0.084	0.145**	0.868	
9. 过度职业认同	-0.026	-0.033	-0.072	0.059	0.000	0.095*	0.396***	0.300***	0.779
10. 职业歧视	-0.064	0.056	-0.061	0.115**	0.045	0.136**	0.472***	0.102*	0.363***
11. 过度职业不认同	0.018	-0.024	-0.154***	0.068	0.081	0.085	0.345***	-0.064	-0.178***
12. 职业转换意愿	0.024	-0.064	-0.103*	0.054	0.066	0.064	0.230***	-0.123**	-0.408***
均值	1.949	0.970	3.277	1.879	2.792	1.730	3.708	4.218	3.631
标准差	0.220	0.171	0.665	0.540	1.046	0.643	1.215	0.543	1.176

注：N = 530, *p < 0.05, **p < 0.01, ***p < 0.001。

4.3 研究假设的检验

本研究模型属于有中介的调节模型：自变量和调节变量的交互作用影响中介变量，中介变量进而对结果变量产生影响（Edwards & Lambert, 2007）。借鉴 Qin 等（2020）方法，首先采用 OLS 回归分析的方法检验自变量和调节变量交互作用对中介变量的影响，即检验假设 1 和假设 3；其次检验自变量和调节变量交互作用是否通过中介变量对结果变量产生影响，即检验假设 2 和假设 4。

本研究首先采用 OLS 回归分析的方法检验矛盾职业认同与他尊获得交互作用对过度职业认同的影响。如表 3 的模型 3 所示，矛盾职业认同与他尊获得交互项对过度职业认同有显著的正向影响（ $b = 0.524$, $p < 0.001$ ）。为更直观呈现他尊获得的调节效应，简单斜率检验显示（见图 2），当他尊获得更高的情况下，矛盾职业认同与过度职业认同呈显著的正向关系（ $b = 0.671$, $t = 11.879$, $p < 0.001$ ）；当他尊获得更低的情况下，矛盾职业认同与过度职业认同的关系不显著（ $b = 0.083$, $t = 1.507$, $p = 0.132$ ）。因此，假设 1 得到

支持。

表 4 呈现了结果变量的回归结果。由表 4 模型 1 可知，矛盾职业认同与他尊获得的交互项对职业转换意愿有显著的负向影响（ $b = -0.310$, $p < 0.001$ ）；表 4 模型 2 显示，过度职业认同对职业转换意愿有显著的负向影响（ $b = -0.416$, $p < 0.001$ ）。当他尊获得更

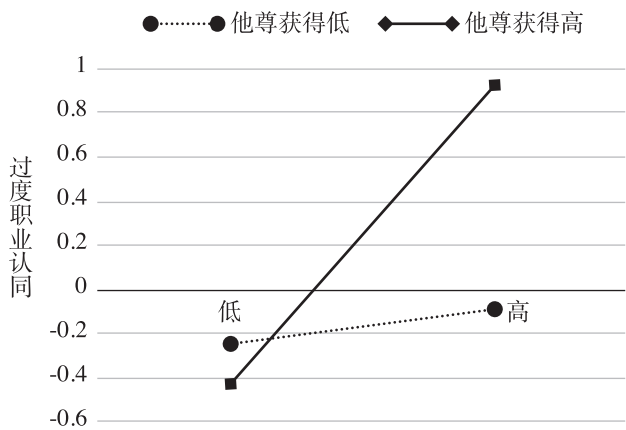


图 2 他尊获得对矛盾职业认同与过度职业认同关系的调节效应

表 3 矛盾职业认同与他尊获得交互作用对过度职业认同的回归结果

变量	过度职业认同		
	模型 1	模型 2	模型 3
性别	-0.170 (0.233)	-0.210 (0.208)	-0.116 (0.198)
婚姻	-0.217 (0.299)	-0.080 (0.267)	-0.052 (0.254)
年龄	-0.120 (0.080)	0.012 (0.073)	0.021 (0.069)
教育	0.103 (0.097)	-0.021 (0.087)	-0.005 (0.083)
工作年限	0.013 (0.052)	-0.039 (0.047)	-0.029 (0.044)
收入	0.162* (0.081)	-0.025 (0.074)	-0.048 (0.070)
矛盾职业认同		0.358*** (0.041)	0.366*** (0.039)
他尊获得		0.537*** (0.085)	0.450*** (0.082)
矛盾职业认同 × 他尊获得			0.524*** (0.070)
F	1.594	18.385***	24.367***
R ²	0.018	0.220	0.297
ΔR ²		0.202***	0.279***

注：N = 530, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, 表中系数为标准化系数，括号数值为标准误。

表 4 他尊获得通过过度职业认同为中介对矛盾职业认同与职业转换意愿的调节作用

变量	职业转换意愿	
	模型 1	模型 2
性别	0.012 (0.162)	-0.036 (0.140)
婚姻	0.316 (0.208)	0.295 (0.179)
年龄	-0.088 (0.057)	-0.079 (0.049)
教育	0.040 (0.068)	0.038 (0.059)
工作年限	0.039 (0.036)	0.027 (0.031)
收入	0.028 (0.058)	0.008 (0.050)
矛盾职业认同	0.159*** (0.032)	0.311*** (0.030)
他尊获得	-0.197** (0.067)	-0.010 (0.059)
矛盾职业认同 × 他尊获得	-0.310*** (0.057)	-0.092 (0.052)
过度职业认同		-0.416*** (0.031)
F	9.191***	29.154***
R ²	0.137	0.360
ΔR ²		0.223***

注：N = 530, *p < 0.05, **p < 0.01, ***p < 0.001, 表中系数为标准化系数, 括号数值为标准误。

高的情况下, 矛盾职业认同通过过度职业认同对职业转换意愿的间接效应显著 (估计值 = -0.252, 95% 置信区间 [-0.313, -0.198]); 当他尊获得更低的情况下, 矛盾职业认同通过过度职业认同对职业转换意愿的间接效应不显著 (估计值 = -0.031, 95% 置信区间 [-0.073, 0.012])。这两组间接效应差值显著 (Δb = -0.221, 95% 置信区间 [-0.296, -0.153])。因此, 假设 2 得到支持。

本研究进一步采用 OLS 回归分析的方法检验矛盾职业认同与职业歧视交互作用对过度职业不认同的影响。如表 5 的模型 3 所示, 矛盾职业认同与职业歧视交互项对过度职业不认同有显著的正向影响 (b = 0.148, p < 0.001)。为更直观呈现职业歧视的调节效应, 简单斜率检验显示 (见图 3), 当职业歧视更高的情况下, 矛盾职业认同与过度职业不认同呈显著的正向关系 (b = 0.461, t = 6.458, p < 0.001); 当职业歧视更低的情况下, 矛盾职业认同与过度职业不认同之间的正向关系更弱 (b = 0.134, t = 3.483, p < 0.050)。因此, 假设 3 得到支持。

表 5 矛盾职业认同与职业歧视交互作用对过度职业不认同的回归结果

变量	过度职业不认同		
	模型 1	模型 2	模型 3
性别	0.016 (0.225)	0.053 (0.213)	-0.002 (0.210)
婚姻	-0.154 (0.288)	-0.163 (0.273)	-0.143 (0.269)
年龄	-0.294*** (0.077)	-0.187* (0.074)	-0.163* (0.073)
教育	0.138 (0.094)	0.040 (0.089)	-0.011 (0.089)
工作年限	0.136* (0.050)	0.088 (0.048)	0.101* (0.047)
收入	0.105 (0.078)	-0.022 (0.076)	-0.078 (0.075)
矛盾职业认同		0.227*** (0.046)	0.282*** (0.047)
职业歧视		0.167** (0.050)	0.225*** (0.051)
矛盾职业认同 × 职业歧视			0.148*** (0.035)
F	4.213***	11.472***	12.535***
R ²	0.046	0.150	0.178
ΔR ²		0.104**	0.132**

注：N = 530, *p < 0.05, **p < 0.01, ***p < 0.001, 表中系数为标准化系数, 括号数值为标准误。

表 6 呈现了结果变量的回归结果。由表 6 模型 1 可知,矛盾职业认同与职业歧视的交互项对职业转换意愿有显著的正向影响 ($b = 0.074, p < 0.050$);表 6 模型 2 显示,过度职业不认同对职业转换意愿有显著的正向影响 ($b = 0.207, p < 0.001$)。当职业歧视更高的情况下,矛盾职业认同通过过度职业不认同对职业转换意愿的间接效应显著(估计值 = 0.120, 95% 置信区间 [0.075, 0.178]);当职业歧视更低的情况下,矛盾职业认同通过过度职业不认同对职业转换意愿的间接效应不显著(估计值 = 0.035, 95% 置信区间 [-0.073, 0.012])。这两组间接效应差值显著 ($\Delta b = 0.085$, 95% 置信区间 [0.043, 0.139])。因此,假设 4 得到支持。

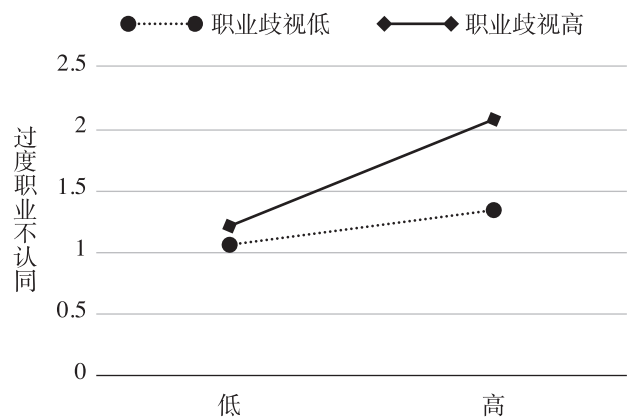


图 3 职业歧视对矛盾职业认同与过度职业不认同关系的调节效应

5 结论与讨论

以往研究大都将矛盾职业认同视为一种反常的认同状态,认为其对从业者存在普遍的负面效应。本研究证实了在非体面工作情景中,从业者的身份认同过程较为复杂,矛盾职业认同的影响后效主要取决于外部情景因素。通过对 530 名医院护工的调研发现,矛盾职业认同与他尊获得的交互作用对过度职业认同有显著的正向影响,而过度职业认同会进一步降低

表 6 职业歧视通过过度职业不认同为中介对矛盾职业认同与职业转换意愿的调节作用

变量	职业转换意愿	
	模型 1	模型 2
性别	0.083 (0.166)	0.084 (0.160)
婚姻	0.306 (0.212)	0.336 (0.205)
年龄	-0.090 (0.058)	-0.057 (0.056)
教育	0.001 (0.070)	0.004 (0.068)
工作年限	0.059 (0.037)	0.038 (0.036)
收入	-0.030 (0.060)	-0.014 (0.058)
矛盾职业认同	0.113* (0.037)	0.054 (0.037)
职业歧视	0.180*** (0.040)	0.133** (0.040)
矛盾职业认同 × 职业歧视	0.074* (0.028)	0.044 (0.027)
过度职业不认同		0.207*** (0.033)
F	6.672***	10.282***
R ²	0.104	0.165
ΔR ²		0.061*

注: N = 530, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, 表中系数为标准系数, 括号数值为标准误。

职业转换意愿;矛盾职业认同与职业歧视的交互作用对过度职业不认同有显著的正向影响,而过度职业不认同则会提高职业转换意愿。本研究证实矛盾职业认同如何影响从业者的职业转换意愿主要取决于矛盾状态的转化,这对组织完善底层工作群体管理提供了启发。

5.1 理论意义

本研究的理论意义包括以下方面:首先,本研究考察矛盾职业认同对从业者职业转换意愿的“双刃剑”影响后效,拓展了矛盾职业认同的相关研究。以往研究大都将矛盾职业认同视为一种反常的认同状态,对从业者身心健康和绩效表现存在普遍的负面影响 (Ashforth et al., 2013; Kreiner & Ashforth, 2004; Pratt, 2000)。本研究对矛盾职业认同绝对消极的结论提出质疑,认为矛盾职业认同影响后效是复杂多变的,既可能对从业者产生消极的影响,也可能产生潜在的积极影响(如引致过度职业认同)。通过探讨矛

盾职业认同潜在的消极和积极影响,需更加辩证地看待矛盾职业认同。在非体面工作情景中,矛盾职业认同可能是从业者遭遇身份认同困境时的一种自我调和策略(Tyler, 2011)。

其次,本研究探讨非体面工作者矛盾认同何时发挥积极或消极影响,厘清了矛盾职业认同影响后效的边界条件。矛盾放大理论认为矛盾识别使个体放大自己的认知和情感反应,形成过度积极或过度消极的态度(Vadera & Pratt, 2013),而矛盾心理转向积极抑或消极方向主要取决于外部刺激物的性质(Katz & Glass, 1979)。本研究发现,非体面工作者在工作过程中经历的情景事件,致使矛盾职业认同诱发不同的认知倾向和行为结果,揭示矛盾职业认同差异化的路径机制(如过度职业认同与过度职业不认同)。具体而言,矛盾职业认同与他尊获得的交互作用对过度职业认同有显著的正向影响,即从业者在工作过程经历的积极事件(如获得他人尊重),矛盾职业认同会转向过度职业认同;而矛盾职业认同与职业歧视的交互作用对过度职业不认同有显著的正向影响,即从业者在工作过程经历的消极事件(如遭遇职业歧视),矛盾职业认同会转向过度职业不认同。

最后,本研究将过度职业认同和过度职业不认同两个对立性的作用机制纳入同一分析框架,考察矛盾职业认同对非体面工作者职业转换意愿的差异化影响。研究发现,在积极的情景条件下(如他尊获得),矛盾职业认同也可能会降低其职业转换意愿;而在消极的情景条件下(如职业歧视),矛盾职业认同则会提高其职业转换意愿。以往研究大多认为矛盾职业认同一种撕裂的状态,对从业者存在普遍的负面影响(Ashforth et al., 2013; Pratt, 2000)。本研究以情景事件为边界条件,厘清非体面工作者矛盾职业认同的复杂影响后效及其隐性作用机理。

5.2 实践启示

在非体面工作情景中,从业者常常对他们的工作保持一种模棱两可的认同状态(Ashforth & Kreiner,

1999; Kreiner et al., 2006),矛盾职业认同对于从业者的工作态度、绩效表现,甚至身心福祉都有着重要影响。以往研究大都基于个体或群体视角,探讨如何降低非体面工作以及矛盾职业认同对从业者的负面影响。然而,非体面工作者的身份认同过程较为复杂,矛盾职业认同潜在的积极效应亦应得到管理者关注。本研究发现,外部积极因素(如他尊获得)使得护工的矛盾职业认同转向过度职业认同,进而降低其职业转换意愿;反之外部消极因素(如职业歧视)使得护工的矛盾职业认同转向过度职业不认同,进而提高其职业转换意愿。因此,为了更好地激发矛盾职业认同的积极影响,管理者应采取有效的措施,充分发挥外部积极因素的功效,规避可能的消极因素。例如,管理者不仅要对其进行工作技能方面的培训,还可以对其进行人际关系技能方面的培训,打造护工与雇主(病人/家属)的良好关系,提高雇主对护工的信任和尊重。激发护工对自身职业的认同感,以提高其工作表现及工作幸福感。此外,还应加强职业平等宣传,树立“工作不分贵贱”的价值观念,从根本上削弱职业歧视与职业污名的消极影响。

5.3 研究不足与未来研究展望

本研究的研究局限主要表现为如下方面:首先,尽管本研究采取时间滞后的方式收集数据,在一定程度上降低了共同方法偏差的问题,但相关变量测量采用被试自陈的方式,仍无法有效解释变量之间的因果关系。未来研究应进一步的完善研究设计,采用多来源多阶段的设计以避免同源偏差的影响;其次,本研究仅聚焦于医院护工,迫于有限的工作机会与家庭生计的压力,大部分护工不得不忍受脏污的工作环境与职业的污名压力,选择继续从事护理病人的这份非体面工作。这为本研究探讨“非体面从业者矛盾职业认同”这一科学问题提供了较好的研究样本。但从业者对不同类型的非体面工作反应存在较大差异(Ashforth & Kreiner, 2014),未来研究可以进一步补充其他非体面工作者的数据样本,以验证本研究结论

在其他情景中的适用性；最后，本研究基于矛盾放大理论，探讨了过度职业认同和过度职业不认同两条差异化的作用路径。将矛盾职业认同、过度职业认同及过度职业不认同纳入同一模型，可能存在一定的测量误差，未来研究可以进一步探讨矛盾职业认同影响后效的其他作用机制，例如工作意义寻求、职业冷漠等影响机制。

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A Study on Transformation Mechanism of Non-Decent Workers' Ambivalent Identification and Its Influence on Intention to Change Occupation

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Abstract: Previous research has generally considered ambivalent occupational identification as a perverse identity state, which has negative effects on employees' physical and mental health and work performance. This study challenges the preconceptions of previous research on the negative effects of ambivalent occupational identification, and argues that ambivalent occupational identification among non-decent workers has both negative and positive complex effects. Using data from 530 hospital caregivers, the results reveal that ambivalent occupational identification among will shift to occupational over-identification when caregivers gain respect in the workplace, thereby decreasing their intention to change occupation. Meanwhile, ambivalent occupational identification will shift to occupational over-disidentification when caregivers experience occupational discrimination in the workplace, thereby increasing their intention to change occupation. This study theorizes and tests how the ambivalent occupational identification affects employees' intention to change occupation depending mainly on transformation of ambivalent states, which provides inspiration for organizations to improve the management of bottom-level work groups.

Key Words: Non-Decent Work; Ambivalent Occupational Identification; Gained Respect; Occupational Over-identification; Occupational Discrimination; Occupational Over-disidentification; Intention to Change Occupation

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证 明

华南农业大学:

贵校报送的决策咨询报告《环“两山”地区加快发展鲍姑艾产业的建议》(作者:罗明忠、胡浩民、崔叶辰、徐光毅、蔡文璠、胡浩钰、黄文彬、阮若卉、杨怡、王洪峰、吕玉波、陈璇如、陈潼正),已在《南方智库专报》(第1491期,2025年4月10日)刊发上报广东省领导,获得广东省委常委、宣传部长胡劲军同志批示。

特此证明。

广东省社会科学界联合会

2025年5月13日

教学研究业绩

华南农业大学文件

华南农教〔2024〕52号

关于公布华南农业大学 2024 年度校级本科 教学质量与教学改革工程项目 立项名单的通知

各学院、部处、各单位：

根据《关于开展 2024 年度校级本科教学质量与教学改革工程项目申报工作的通知》精神，经项目负责人申报、所在单位推荐和学校组织专家评审、公示等程序，决定立项“基于大湾区新能源汽车人才需求的智能网联技术课程改革”等 121 个项目为 2024 年度校级本科教学改革项目；立项“涉外法治人才培养实验班”等 36 个项目为 2024 年度校级本科质量工程项目；根据学校年度人才培养工作重点及本年度申报项目质量，立项“‘长基计划’下新文科历史学课程体系的改革与实践”等 11 个项目为 2024 年度“长基计划”教学质量和教学改革工程专项项目（经费由“长

基计划”专业专项资金资助)。具体名单见附件。

请各项目负责人按照项目建设任务及要求,及时开展各项工作,加快推进学校人才培养改革,并力争取得高水平的教学成果。各单位要切实履行项目建设主体责任,加强对项目建设的督促、指导,以确保项目能如期高质量完成建设任务。

特此通知。

- 附件: 1. 华南农业大学 2024 年度校级本科教学改革立项名单
2. 华南农业大学 2024 年度校级本科质量工程立项名单
3. 华南农业大学 2024 年度校级“长基计划”教学质量和教学改革工程专项立项名单

华南农业大学

2024 年 8 月 15 日

(联系人: 孙齐胜; 电 话: 85288020)

公开方式: 主动公开

华南农业大学党政办公室

2024 年 8 月 20 日印发

华南农业大学2024年度校级教学改革项目立项名单

序号	项目编号	项目类别	单位	项目名称	负责人
1	JG2024001	重点项目	工程学院	基于大湾区新能源汽车人才需求的智能网联技术课程改革	吴伟斌
2	JG2024002	重点项目	动物科学学院	基于实践创新能力培养的《养猪学》课程教学改革研究	洪林君
3	JG2024003	重点项目	林学与风景园林学院	数智驱动：AI赋能的 林木育种学课程教学模式创新研究	周玮
4	JG2024004	重点项目	公共管理学院	融合人工智能的土地资源管理“新文科”课程教学改革与实践	刘轶伦
5	JG2024005	重点项目	党委学生工作部（党 委研究生工作部）	基于新时代就业形势的生涯教育课程本土化探索与改革	卢小圣
6	JG2024006	重点项目	农学院	农学专业专业课线上线下混合式教学模式探索与实践——以耕作学课程为例	王小龙
7	JG2024007	重点项目	工程学院	基于OBE理念的工程伦理教学体系研究与实践	张亚莉
8	JG2024008	重点项目	食品学院	新农科背景下《研究方法与伦文写作》的实践教学改革与探索	苗建银
9	JG2024009	重点项目	材料与能源学院	新农科背景下一流农林院校《材料物理》课程教学改革与实践	张学杰
10	JG2024010	重点项目	经济管理学院	基于社会情绪和创新能力提升的课程教学改革——组织行为学为例	徐峰
11	JG2024011	重点项目	图书馆	新媒体环境下知识产权素养微课程教育模式探索与实践	程燕锋
12	JG2024012	重点项目	食品学院	面向行业应用及创新人才培养的《酿造工艺学实验》改革研究	蹇华丽
13	JG2024013	重点项目	植物保护学院	“双一流”背景下本科生拔尖创新人才培养体系创新研究——以植物保护 专业为例	崔紫宁
14	JG2024014	重点项目	动物科学学院	《动物营养学》课程思政建设与教学模式改革	谭成全
15	JG2024015	重点项目	马克思主义学院	整体性比较视角下高校“四史”教育之党史课程内容体系构建研究	王景奇

序号	项目编号	项目类别	单位	项目名称	负责人
16	JG2024016	重点项目	资源环境学院	基于虚拟仿真技术的环境工程专业“新工科沉浸式实践教学”模式探索	梁瑜海
17	JG2024017	重点项目	林学与风景园林学院	新工科背景下风景园林设计表达课程教学改革研究	刘京一
18	JG2024018	重点项目	数学与信息学院、软件学院	产教融合背景下多元协同培育创新型人才模式探索与实践——以管理科学类专业为例	韦婷婷
19	JG2024019	重点项目	电子工程学院 (人工智能学院)	基于知识图谱的《数字电子技术》课程思政建设与实践	赵文锋
20	JG2024020	重点项目	基础实验与实践训练中心	基于“互联网+”的新工科工程训练云平台构建研究	温威
21	JG2024021	重点项目	林学与风景园林学院	新农科引领下林学一流专业改造提升路径探索与实践	刘效东
22	JG2024022	重点项目	资源环境学院	新农科建设背景下课程思政教学模式探索与革新——以《土壤学》为例	李博
23	JG2024023	重点项目	数学与信息学院、软件学院	课程思政视域下的《高等代数》课程建设的探索与实践	陈羽
24	JG2024024	重点项目	信息网络中心	以新质人才培养为导向的高校“AI+智慧教学”创新模式构建研究与实践	江晓庆
25	JG2024025	重点项目	水利与土木工程学院	《工程力学》课程思政的建设与实践	卢玉华
26	JG2024026	重点项目	农学院	国际化背景下基于“双一流”建设的作物学本科生全英课程教学模式研究——以《生物信息学》为例	张慧
27	JG2024027	重点项目	水利与土木工程学院	基于项目式教学的《建筑物理》教学改革	金玲
28	JG2024028	重点项目	海洋学院	基于新质生产力的水产养殖学专业实践教学体系构建与实践	孙际佳
29	JG2024029	重点项目	园艺学院	基于创新能力培养的教学模式探索——以新农科课程“干花创意设计”为例	陈国菊
30	JG2024030	重点项目	生物质工程研究院	“双碳”背景下的《生物质复合材料加工方法》课程教学改革与实践	郝笑龙
31	JG2024031	重点项目	植物保护学院	《农业植物病理学教学实习》思政设计与实践	纪春艳
32	JG2024032	重点项目	生物质工程研究院	“双一流”背景下农科《有机化学》 教学模式的改革研究与实践	李鑫

序号	项目编号	项目类别	单位	项目名称	负责人
33	JG2024033	重点项目	材料与能源学院	新农科建设背景下《无机及分析化学》课程思政建设与实践	刘威
34	JG2024034	重点项目	艺术学院	数字人文视域下思政元素融入农林院校美育课程的创新实践研究	李春阳
35	JG2024035	重点项目	材料与能源学院	思政教育提高《物理化学》课程教学质量研究	杨思源
36	JG2024036	重点项目	外国语学院	英语专业产教融合新路径探索：基于社会认知理论的“英语+行业”虚拟教研室建设	杨敏
37	JG2024037	重点项目	艺术学院	“立德树人”视域下涉农高校音乐专业课程思政实现路径研究	石娟娟
38	JG2024038	重点项目	党政办公室（研究室）	“以学生为中心”的高效课堂评教指标体系建构研究	郭燕锋
39	JG2024039	一般项目	公共管理学院	导学讲评式教学在《公共行政学》课程中的运用研究——基于典型案例	曾小龙
40	JG2024040	一般项目	数学与信思学院、软件学院	以大学生计算机设计大赛促进学生创新能力培养研究	张连宽
41	JG2024041	一般项目	材料与能源学院	AIGC技术在家具设计与工程专业课教学中的应用研究	宋杰
42	JG2024042	一般项目	外国语学院	数智时代大学英语课程思政多模态教育路径研究	赵勇
43	JG2024043	一般项目	数学与信思学院、软件学院	元认知导向的数据结构教学设计研究与实践	司国东
44	JG2024044	一般项目	人文与法学院	立体性与多元化——基于融媒介视野下的《红楼梦》传统课程教学的变革与创新	梁颖稚
45	JG2024045	一般项目	马克思主义学院	“问题链+小组研学”模式在思政课教学中的运用研究——以《中国近现代史纲要》为例	汤丽莉
46	JG2024046	一般项目	林学与风景园林学院	新工科背景下基于OBE的风景园林专业美育教学研究	常博文
47	JG2024047	一般项目	资源环境学院	学科竞赛驱动下的GIS实践与创新型人才培养模式研究	吴小芳
48	JG2024048	一般项目	园艺学院	神秘的一片树叶——凤凰单丛加工仿真实验	刘少群
49	JG2024049	一般项目	水利与土木工程学院	与乡村建设实践相结合的《建筑设计II》课程教学内容体系改革与建设	许媛媛

序号	项目编号	项目类别	单位	项目名称	负责人
50	JG2024050	一般项目	电子工程学院 (人工智能学院)	《光纤传感技术》课程知识图谱的建设	曾应新
51	JG2024051	一般项目	林学与风景园林学院	思政背景下的“环境保护与可持续发展” 线上线下融合教学探索与实践	李青粉
52	JG2024052	一般项目	公共管理学院	TBL教学模式在“小组工作”课程中的应用	曾永辉
53	JG2024053	一般项目	基础实验与实践训练 中心	遗传学实验课程思政建设模式的探索与实践	李亚娟
54	JG2024054	一般项目	资源环境学院	基于角色互换的《肥料工艺与肥料资源利用》教学优化研究	孙少龙
55	JG2024055	一般项目	兽医学院	结合大湾区在线开放课程的《兽医寄生虫学》教学改革与实践	元冬娟
56	JG2024056	一般项目	园艺学院	《茶树育种学》“四位一体”混合式教学体系的构建与实践	晏嫦好
57	JG2024057	一般项目	图书馆	面向大学生创新创业能力培养的图书馆服务研究	史艳丽
58	JG2024058	一般项目	外国语学院	“双一流”背景下农业高校公共英语教学资源建设与教学模式研究	夏妙月
59	JG2024059	一般项目	兽医学院	强化生物安全理念的《兽医传染病学实验》课程实践探索	沈雪娟
60	JG2024060	一般项目	农学院	“知农爱农”核心素养导向的《主要农作物识别》课程设计与实践	程雄
61	JG2024061	一般项目	林学与风景园林学院	《森林经理学》课程体系教学改革研究与实践	林娜
62	JG2024062	一般项目	农学院	教育数字化背景下AI赋能新农科专业教学模式探索与实践——以《试验统 计学实验》课程为例	布素红
63	JG2024063	一般项目	园艺学院	《茶叶生物化学》课程教学评价改革的研究与实践	张灵枝
64	JG2024064	一般项目	艺术学院	新媒体类课程融入思政元素的探索与实践	梁松清
65	JG2024065	一般项目	图书馆	新时代高校图书馆阅读推广服务育人机制研究	刘丽葵
66	JG2024066	一般项目	体育教学研究部	大学体育课程思政“微实践”体验式课例实践研究 ——以跆拳道为例	黄海峰

序号	项目编号	项目类别	单位	项目名称	负责人
67	JG2024067	一般项目	基础实验与实践训练中心	AI交互化学实验智能平台建设研究	葛春玉
68	JG2024068	一般项目	经济管理学院	新文科背景下会计专业改造与提升的研究与实践	于健南
69	JG2024069	青年项目	工程学院	基于理论前沿与实践应用相融合的混合式案例教学模式探索与实践——以《智能控制》课程为例	施琳琳
70	JG2024070	青年项目	马克思主义学院	“习近平用典”融入高校思政课程教学的路径探究——以《习近平新时代中国特色社会主义思想概论》课为例	韩谦
71	JG2024071	青年项目	数学与信息学院、软件学院	农业院校“计算机网络”课程教学创新与实践探索	邱少健
72	JG2024072	青年项目	人文与法学学院	“双一流”背景下农林院校“农文化+文学”教育模式新探索	张吕坤
73	JG2024073	青年项目	经济管理学院	数字化时代背景下《人力资源管理》教学内容与教学模式改革	徐光毅
74	JG2024074	青年项目	马克思主义学院	田野调查在思政育人中的创新与运用	张慧慧
75	JG2024075	青年项目	食品学院	新工科背景下基于OBE理念的“畜产品加工学”混合式教学模式探究	郭宗林
76	JG2024076	青年项目	马克思主义学院	问题链教学法在“马克思主义基本原理”课程教学的创新与运用	林逸云
77	JG2024077	青年项目	水利与土木工程学院	中华文化融入高校课程思政的探索与实践	陈文杰
78	JG2024078	青年项目	国际教育学院（广州都柏林国际生命科学与技术学院）	农业院校基于产出导向法的英语口语课程思政教学实践研究	邱倩
79	JG2024079	青年项目	兽医学院	“兽医寄生虫学实验”课程思政改革研究	许瑞
80	JG2024080	青年项目	马克思主义学院	高校思政课阐释中国式现代化的政治经济学视域研究	孙晓晖
81	JG2024081	青年项目	马克思主义学院	时间视域下思想政治理论课教学实效性提升研究——以《中国近现代史纲要》课程为例	孙飞争
82	JG2024082	青年项目	电子工程学院（人工智能学院）	基于OBE和云边端协同的DSP技术与应用混合式教学实践研究	高鹏
83	JG2024083	青年项目	园艺学院	《园艺植物生物技术》课程教学的改革与探索	彭泽

序号	项目编号	项目类别	单位	项目名称	负责人
84	JG2024084	青年项目	动物科学学院	新农科背景下高质量动物科学专业人才培养探索与实践	何小敏
85	JG2024085	青年项目	海洋学院	基于 OBE 理念的大学生心理健康教育课程设计与实践研究	苏婉
86	JG2024086	自筹项目	工程学院	多维视角下的《工程热力学与传热学》教学：思政教育与工程知识的融合	李成杰
87	JG2024087	自筹项目	食品学院	“新工科”视角下基于OBE教学理念的《食品有害物质检测分析》多模式教学探索与实践	王群
88	JG2024088	自筹项目	基础实验与实践训练中心	《生物化学实验》教学内容的优化和数字资源的构建与实践	许可
89	JG2024089	自筹项目	公共管理学院	新文科“专创融合”课程的教学改革与实践——以《新文科创新创业思维与就业力提升》课程为例	周毅
90	JG2024090	自筹项目	外国语学院	“讲好中国故事”视域下跨文化能力教学改革与实践——以《中外文化比较》课程为例	侯丽娟
91	JG2024091	自筹项目	数学与信息学院、软件学院	“三全育人”背景下《编译原理》课程思政改革与实践	王海燕
92	JG2024092	自筹项目	工程学院	课程思政在《燃烧学》线上线下混合教学中的实践	胡志锋
93	JG2024093	自筹项目	电子工程学院 (人工智能学院)	以学生为中心的《传感器与检测技术》课程整体优化研究与实践	赵懿琨
94	JG2024094	自筹项目	外国语学院	基于课程思政理念的《英语影视听说》课程混合式教学模式探索	李姝惠
95	JG2024095	自筹项目	材料与能源学院	基于OBE理念的大学生心理健康教育课程思政建设研究	戴金玲
96	JG2024096	自筹项目	食品学院	“新工科”背景下的《生物分离工程与酶工程实验》教学改革探索	刘韵乐
97	JG2024097	自筹项目	动物科学学院	《畜禽健康养殖与安全生产》课程优化与创新	郭勇庆
98	JG2024098	自筹项目	工程学院	基于项目驱动的《电力电子技术》理论-实践课程融合教学方法研究	胡仁俊
99	JG2024099	自筹项目	材料与能源学院	课程思政背景下“有机合成”课程教学改革研究	徐莉
100	JG2024100	自筹项目	人文与法学院	基于三情分析的就业指导课程思政实践路径研究——以法学专业为例	陈琦

序号	项目编号	项目类别	单位	项目名称	负责人
101	JG2024101	自筹项目	林学与风景园林学院	“互联网+”背景下《高尔夫球场管理》课程思政实践研究	钟天秀
102	JG2024102	自筹项目	林学与风景园林学院	基于思政视域和应用场景的产教融合式《测树学》课程教学体系探索研究	邓成
103	JG2024103	自筹项目	艺术学院	新型音乐剧教学模式：AI赋能实践探索	李乐
104	JG2024104	自筹项目	经济管理学院	数字化转型下的新文科经管类虚拟实验室建设改革探索	李巧璇
105	JG2024105	自筹项目	数学与信息学院、软件学院	就业创业课程教学内容优化与实践 ——基于大学生劳动法律风险应对能力提升的研究	张佳午
106	JG2024106	自筹项目	生命科学学院	“慢就业”背景下基于 OBE 理念的大学生“就业+心理”课程体系改革研究	梁辰
107	JG2024107	自筹项目	公共管理学院	新文科背景下公共管理专业大数据课程建设的探索与实践	刘志明
108	JG2024108	自筹项目	文博馆	高校农博馆传承农耕文化的路径探讨——以华南农业博物馆为例	刘峻嵘
109	JG2024109	自筹项目	电子工程学院 (人工智能学院)	基于数字化评价的模电实验教学改革	殷惠莉
110	JG2024110	自筹项目	动物科学学院	基于OBE教育理念的动物遗传学课程教学改革与实践	蔡柏林
111	JG2024111	自筹项目	数学与信息学院、软件学院	人工智能赋能《数理统计》课程混合教学的探索与实践	朱玲湘
112	JG2024112	自筹项目	体育教学研究部	混合教学中线上线下教学一体化设计 ——以华南农业大学《空手道思政课程》为例	黄飞
113	JG2024113	自筹项目	生命科学学院	新农科背景下《大学生职业生涯发展与就业力提升》课程思政设计与实践	郭雪倩
114	JG2024114	自筹项目	人文与法学院	习近平法治思想融入法学实践教学研究 ——以模拟课程为例	王琳
115	JG2024115	自筹项目	图书馆	高校虚拟教研室建设与图书馆嵌入式服务研究	周立军
116	JG2024116	自筹项目	林学与风景园林学院	高校学生会组织功能型团支部建设的探索与实践	喻凯
117	JG2024117	自筹项目	生物质工程研究院	能源化学课程与教学内容改革与建设	钟家伟

序号	项目编号	项目类别	单位	项目名称	负责人
118	JG2024118	自筹项目	文博馆	本科教学评估视域下高校试卷档案信息化管理新模式研究	叶小泮
119	JG2024119	自筹项目	植物保护学院	激发科研意识的思政教学在本科分子生物学课程教学中的应用	阮小蕾
120	JG2024120	自筹项目	动物科学学院	优化实践平台提高桑树教学质量改革的探索	刘伟强
121	JG2024121	自筹项目	艺术学院	农业院校影视动画专业助力乡村振兴战略的实践探索	刘瑞

其他业绩

CRA

证书编号: CRABKGAH20246687

荣誉证书

华南农业大学 的参赛作品《“学成不忘桑梓地，回乡建设新农村”——乡村振兴视角下“大学生村官”的报考意愿调查》在中国商业统计学会主办的“正大杯第十四届全国大学生市场调查与分析大赛总决赛”中，荣获 **三等奖**。

团队学生成员：张浩贤、余潇玥、梁文轩、钟佩怡、罗静柔

指导教师：周 燕、何 凯、徐光毅

颁发机构：



颁发日期： 2024 年 6 月 2 日

华南农业大学大学生创新训练计划项目 立项证明

兹证明 经济管理学院 于子诺 (202223220326) 主持，
2025 年大学生创新训练计划项目获得立项，项目名称：“次元造梦家”——COS服饰定制与二次元集合平台的构建者，项目编号：202510564216X，项目级别：国家级，指导教师：徐光毅、朱柯权。

华南农业大学学生工作部（研究生工作部）
创新创业学院
2025 年 6 月 16 日



荣誉证书

徐光毅：

被评为华南农业大学2025年“七一”表彰

优秀共产党员。

特发此证，以资鼓励。



验证二维码 证书编码：2025033117



中共华南农业大学委员会

2025年6月

荣誉证书

徐光毅 老师：

您在指导2024届经济管理学院本科毕业论文中表现优秀，荣获
“优秀本科论文指导老师”称号。

特发此证，以资鼓励！

华南农业大学经济管理学院

二〇二四年六月二十八日



荣誉证书

徐光毅老师：

在 2023 年经济管理学院教师教学大赛中表现优异，荣获

二等奖

特发此证，以资鼓励！

华南农业大学经济管理学院

二零二三年六月十四日

