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Fostering collaborative approaches to gender equality interventions in higher education and research: the case of transnational and multi-institutional communities of practice

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ABSTRACT

Higher education and research and innovation in Europe continue to suffer from an indefensible waste of female talent and gender inequality. The European Commission recommends that these organizations adopt gender equality plans (GEPs) and other initiatives for institutional change. However, the levels of readiness, expertise, and experience with such interventions are wide-ranging across institutions and member states, thus collaborative approaches might be particularly valuable. Drawing on the experiences of transnational and multi-institutional communities of practice (CoPs) for gender equality (GE), we illuminate how the CoP approach supported change agents, who leveraged CoP membership to respond to challenges in promoting GE initiatives. Being part of collaborative, co-designed CoPs for learning, knowledge sharing, and institutional change provided external support to the change agents' activism and allowed them to build legitimacy around GE work. CoP members leveraged this support through learning opportunities, knowledge transfer, sharing practice, political support, and solidarity from the CoP stakeholders. Findings also show that when CoPs were transnational, multi-institutional, and interdisciplinary, their heterogeneity did raise some challenges in relation to the divergence of members' contexts and geopolitical idiosyncrasies and that this should be considered when designing CoPs which transcend national and institutional boundaries.

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Introduction

The virtues of higher education (HE) and research for promoting and achieving social justice are undisputable; however, the status-quo of these harbingers of knowledge remains problematic in relation to gender equality (GE). The SHE Figures from 2018 (European Commission, 2019) evidence slow progress as women continue to be significantly underrepresented, and their potential undervalued (European Platform of Women Scientists, 2019). Although, we have seen an increase in women doctoral graduates, horizontal gender segregation across disciplines remains, together with gender imbalance among researchers in science, technology, engineering, and mathematics (STEM); gender pay gap, lower publication authorship and citation rates, and lower funding success rates for women. Furthermore, women's representation in academia decreases at higher levels,

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culminating in the small percentage of women in decision-making posts, on boards, in committees, and as heads of institutions. In 2017, 73% of board members (including leaders) and 78.3% of heads of institutions in the HE sector were men (European Platform of Women Scientists, 2019, p. 115).

The first EU-wide investment to raise awareness and enhance gender competences among researchers and research support officers was the Gender in Research project that ran from 2010 to 2012 (Sangiuliano & Cortesi, 2019, p. 180). Since then, various strategies for achieving GE in institutions have been implemented ranging from gender mainstreaming, gender impact assessments, gender budgeting, and gender equality plans (GEPs) (Ikävalko & Kantola, 2017). GEPs focus on policy interventions within institutions, and they are structured into the stages of analysis, planning, implementation, and monitoring (European Commission, 2016). However, GEPs have not been immune to criticism in relation to efficiency, efficacy, or failure to recognize the complexity of structural, cultural, and institutional factors that impede women in HE and research and innovation (R&I) (Kalpazidou Schmidt & Cacace, 2019). Further, it is argued that the work of GEPs falls mainly on those it purports to help, and that they are dealt with as a tick-box exercise, undermining the possibility for radical change (Caffrey et al., 2016). To an extent, this was addressed in funded coordination and support action projects (for example, European Commission Calls in Horizon 2020 Gender in Research and Innovation¹), where applicants applied for funding to implement GEPs within their own partner institutions, and were the core beneficiaries of the funds and outputs. These projects had to be signed off by the main bodies of governance of HE or research institutions. Consequently, building a GEP was a goal for the whole institution, and it provided the strategic purpose and validation of GE work.

However, change agents may still grapple with resistance from actors at different levels in the institution; coordination and cooperation failures in complex organizations; a lack of gender competence, expertise or tools for each phase of GEP implementation; unclear mid- or long-term vision for action; and a lack of budget, human resources and structures in place (European Institute for Gender and Equality, 2016). Cumulatively, these challenges limit the possibilities for institutional change for GE, since inequalities and androcentric knowledge production in HE and R&I are entrenched across a range of organizational processes and procedures. Thus, it is difficult to eradicate inequalities with an action plan that is often limited in time span and in scope since institutional change takes time and is complex (Kalpazidou Schmidt & Cacace, 2017; Palmén & Kalpazidou Schmidt, 2019). In some contexts, GEPs may not even be the right instruments to achieve institutional change if basic requirements of impact drivers at both organizational and processual levels are absent (European Institute for Gender and Equality, n.d.). Many institutions are only beginning to challenge gender inequalities through initiatives such as charters or adopting a broad, yet context-specific GE agenda. In such cases, experience and expertise may be limited which is likely to hinder attempts to challenge gender inequalities. A collaborative approach to GE work in HE and R&I through transnational and multi-institutional CoPs is underexplored and underutilized, yet it can potentially alleviate some of these challenges. CoPs are defined as 'groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis' (Wenger, McDermott, & Snyder, 2002, p. 2). To draw on the CoP approach for promoting GEP implementation and a broader GE agenda is thus persuasive.

Firstly, the literature on CoPs provides evidence that this approach may foster knowledge sharing and knowledge creation to improve the effectiveness of existing practices within and across organizations (Probst & Borzillo, 2008). Secondly, CoPs may be a suitable vehicle for driving institutional willingness and capacity to think and work together (Pyrko, Dörfler, & Eden, 2017) on gender issues by providing a forum for mutual learning and capacity building. This may reduce opportunities for resistance, since the CoP approach emphasizes community engagement, participation, sharing, consensus, and competence development (Cambridge, Kaplan, & Suter, 2005). CoP as the source of support, expertise, inspiration, knowledge, and tools offers a promising approach to supporting the steps for GEP implementation (European Institute for Gender and Equality, 2016).

In particular, CoPs can provide tools and guidance on assessment of the gender (in)equality status quo of the institution (analysis), inspiration from measures implemented by other organizations (planning), fostering of participation of actors through participatory approaches (implementation), and access to networks of gender expertise (monitoring), as well as encouraging engagement of stakeholders (evaluation) (Espinosa, Bustelo, & Velasco, 2016). At the same time, the embeddedness of the CoP member within the institution means that the internal and external context of the institution is considered in tailored GE actions, and that the change agent is an internal stakeholder enabling them to act within. Therefore, the relevance of CoP as an innovative way of organizing GE work might be pivotal across all phases of the implementation of GEP and, more broadly, institutional change.

In this paper, we present evidence from an evaluation study of a transnational network of multi-institutional CoPs supported through the ACT-on-Gender² (ACT) project which aimed to promote GE and improve the implementation of GEPs in HE, and research funding and research performing organizations (RFOs and RPOs) in Europe. It was transnational, as it was extending and operating across national boundaries in Europe; and multi-institutional, as its members joined from numerous, and often diverse institutions. As CoP is an approach rarely explicitly utilized in GE contexts, this article makes an important contribution to our understanding of how CoP as a method for organizing learning, knowledge exchange, and promoting institutional change can alleviate the most common challenges of GE work. We do so by drawing on and Kalpazidou Schmidt's (2019) study on key factors that influenced the implementation of gender equality interventions in R&I in Europe. The ten-factor framework informs our set of *a priori codes* to foreground the experiences of CoP members and CoP facilitators who took part in the project. We explored, through semi-structured interviews, how the CoP approach could potentially address and circumvent the challenges of GE work. Thus, the overarching research question guiding this study was: *To what extent does the CoP approach support change agents, and in what ways do these individuals leverage their CoP membership to respond to challenges in promoting gender equality interventions in higher education and research institutions?*

Gender Equality in European Research Area (ERA)

Gender equality and gender mainstreaming are identified as one of six ERA priorities. Whilst advancements have been made in many of the targeted areas in GE, the European Commission (EC) recognizes that 'progress has been slow and remains insufficient' (European Commission, 2020, p. 2). Proposed targeted actions include strengthening the participation of women in STEM and promoting an inclusive, intersectional approach. The EC proposes that as of 2021, GEPs will become a criterion for research organizations to receive research funding under Horizon Europe. The EC has funded various rounds of institutional change projects through the 7th Framework Programme and Horizon 2020, whereby consortia of between five and ten RPOs and RFOs throughout Europe worked together to share experiences of implementing GEPs in their respective organizations. Other research projects have also been funded to further develop the knowledge base, that is, to develop an evaluation framework to enable an assessment of GE intervention outcomes in R&I (for example, EFFORTI³), as well as examine gender diversity at the team level (for example, GEDII⁴). To complement this work, the EC have in tandem funded coordination and support actions, that is, the creation of an academy of training for institutional change (GE Academy⁵), as well as establishing a European network of CoPs to tackle gender inequalities in the field of R&I (such as, ACT-on-Gender).

The analysis presented in this paper is based on the ACT-on-Gender CoP project. ACT is unique since gender equality-related CoPs in HE and research have so far been either conceived of as promoting institutional change within the directly funded organizations (project beneficiaries, for example, SPEAR,⁶ TARGET⁷), or as a multi-institutional CoP within a project (Gender-Time⁸). ACT, however, aimed to establish several broad-reaching CoPs, each one managed by a project partner, but extended to other research organizations *beyond* the project team (multi-institutional) working

Table 1. Ten hindering and facilitating factors for gender equality plan implementation in research and innovation, adapted from Palmén and Kalpazidou Schmidt (2019).*) HR – human resources.

Factor	Description
Governance Framework	National legislation and policy; legally binding measures; positive incentives.
Top-management Commitment	Managers working top-down from recruitment and changing management culture; developing key gender competences; belief in the relevance of equality measures.
Bottom-up Participation	All employees to participate in GEPs. Bottom-up buy-in from HR staff, researchers, students in an open and active process to reflect the communities' needs.
Framing Synergies with Other Initiatives	The framing of gender issues inextricably linked to excellence in R&I and linked to external funding opportunities.
Resistance	Implicit and explicit resistance.
Resources	Both economic and human resources.
Sustainability of Actions	Fostering sustainability through staff retention; recognition that institutional change takes years and multitude of outcomes from a long-term perspective.
Gender Competence, Expertise and Knowledge	Gender experts' knowledge integration into projects affects outcomes, with those more centrally placed linked to a more successful implementation.
Transparency, Targets and Monitoring	Realistic, measurable targets tailored to each institution's needs. Monitoring and reporting accessible and available to all.
Accessible Data and Information	Crucial for implementing a GEP; data protection limiting access; technical imperatives taking priority over social data in the design of information systems.

together to share knowledge, experiences and practices in a specific issue linked to GE in HE and research institutions across Europe. This operational design of ACT CoPs meant that institutions not directly funded by the EC were sponsored by ACT who cascaded the support to institutions who expressed interest in joining the CoP by signing a memorandum of understanding with the ACT consortium. This approach was novel as it dramatically increased accessibility to support, knowledge, expertise, networks, and funding normally only available to the consortium grant holders and their immediate stakeholders.

The conceptual framework on which the empirical analysis was primarily based brings together literature concerning the implementation of a wide range of GE interventions in R&I (Palmén & Kalpazidou Schmidt, 2019), including GEPs (Murgia & Poggio, 2018), with literature related to CoP and its concomitant collaboration and cooperation. We will now present the main issues identified in the literature in reference to these two key areas in turn.

Facilitating and hindering factors for GEP implementation

In a 19-case study meta-analysis, Palmén and Kalpazidou Schmidt (2019) developed a ten-factor framework of facilitating and hindering factors of the implementation of GE interventions in HE and research institutions in Europe. Implemented interventions varied by scope (national; regional; and institutional levels), by targeted sector (HE; business; governmental) and by ERA priority (gender balance in R&I teams; in decision-making; and gender dimension in research content). The case studies focused on intervention design, implementation, and impact. From qualitative data, the authors identified common factors, such as critical structures and processes that either enabled or hindered the smooth implementation of the intervention throughout all case studies. Each factor is briefly explained in Table 1.

The factors were identified across the case studies in European countries, in a context where the institutions implementing GE interventions were relatively isolated from each other, thus less able to exchange their experiences, knowledge and best practices. The case studies were national level, regional or institutional interventions with no connection between them.

Communities of practice for gender equality

The concept of CoP was originally developed by Lave and Wenger (1991) who stated that learning occurs through social interactions rather than individual acquisition of knowledge. Three key

dimensions define a CoP: shared interest in a topic of practice (domain), mutual engagement (community) and development of a shared repertoire of resources (practice). Cambridge et al. (2005) further identified four main elements in assessing the quality of community design, development and support in relation to community activities: building relationships, learning and developing a shared practice, and purposeful action undertaken as a community. This collaborative action and practice give rise to the generation and discovery of new knowledge, thereby redefining and informing the domain (Cambridge et al., 2005). The focus in the most recent CoP literature appears to be on pedagogy and education (Finn et al., 2021; Hoelscher, Barragato, & Mong, 2021; Ryan, Faulkner, Dillane, & Flood, 2021), including the Covid-19 pandemic as a contextual lens (Bolisani, Fedeli, Bierema, & De Marchi, 2020; McLaughlan, 2021); and on management (Britt, 2020; Haas, Abonneau, Borzillo, & Guillaume, 2020; Hennekam, Macarthur, Bennett, Hope, & Goh, 2020; Rennstam & Karreman, 2020).

However, utilizing CoP as a vehicle for promoting social justice and equality efforts in HE has been rarely explored in previous studies, with some notable exceptions (Hakkola et al., 2021; Sidman-Taveau & Hoffman, 2019; Annala & Mäkinen, 2017). These examples are based around pedagogical practices, curriculum reforms and addressing equality gaps in student access, rather than GE goals among researchers and faculty. Importantly for the context of this paper, however, these studies converge in recognizing the perils of equality-minded work requiring challenges to traditional ideologies and practices and institutional change in the academia. They highlight the significance of fostering the less tangible efforts for institutional equality-related change (Sidman-Taveau & Hoffman, 2019), such as group negotiation of meaning (Annala & Mäkinen, 2017), regular engagement with other change agents around defining and practicing equality to build relationships, and 'providing a reservoir of safety and camaraderie within the perceived hegemonic academic environment' (Hakkola et al., 2021, 'The Change Process'). These aspects appeared to be especially compelling, as doing equality work while being situated in a larger system of inequality is a high-risk endeavour (Hakkola et al., 2021). Van den Brink (2020) also illuminated that CoPs can be key to promoting a change agenda, as they act as 'storage containers' for organizational memory and learnings. This can prevent change agents having to continually re-build 'new' memory on diversity policies and gender inequality and their implementation, and instead foster the transfer and maintenance of knowledge. In fact, the inability to create a CoP impeded change (van den Brink, 2020).

In a cross-national coordination and support action project GenderTime focusing on the implementation of GEPs in research and HE institutions, Barnard, Hassan, Dainty, Polo, and Arrizabalaga (2016) also demonstrated that foregrounding CoP in GE initiatives can be a compelling conceptual model for promoting institutional change. The authors applied two CoP components of knowing (competency and experience) to the supporting of GEP implementation. Through mapping, institutional pairing, and workshops exploring challenges and successes, community members and facilitators could share experiences of implementing GEPs, which led to enhancing their competence. This participative collaboration enabled individual members to benefit from being part of the community, particularly when change agents were relatively isolated at institutional level. Moreover, the stimulation of learning processes and knowledge sharing was an important factor for activating structural change dynamics and supporting GEP design and implementation. Being part of a CoP enabled the members to identify gaps and common issues, formulate new solutions, and helped to highlight the tried and tested GE measures (Barnard et al., 2016). To date, the application of CoPs to EC-funded projects is similar across GenderTime, SPEAR, and TARGET. Here, we draw on Barnard et al.'s (2016) application of the CoP theory to GenderTime to illustrate the main differences with the ACT CoP network. Firstly, the *ACT Domain* is broader as it transcends the focus on implementation of GEPs in HE and R&I, and recognizes that the less experienced institutions in countries where GE work is not as advanced may be ready only for informal GE measures and slow and gradual institutional change efforts. Secondly, the *ACT Community* is more inclusive, as its members originate from institutions external to the project consortium. This is unlike GenderTime

Table 2. The three dimensions of community of practice in GenderTime and ACT. Adapted from Barnard et al. (2016).

CoP Element	Application in GenderTime	Application in ACT
<i>Domain</i> Defines a set of issues to affirm the purpose and value to members and stakeholders.	The implementation of GEPs in HE and R&I in Europe.	The implementation of GEPs and institutional change for GE in HE and R&I in the ERA; focused on discipline, geography, theme, or type of organization and principal activities; the 'know what'.
<i>Community</i> Members engage in joint activities and build relationships to learn from each other.	Limited in size, small, exclusive, consortium-only network of researchers and practitioners communicating and meeting regularly to share experiences, learn, build knowledge. 'Consortium as the core beneficiary' approach (also in EQUAL-IST, Baltic Gender, SAGE)	Unlimited in size, large, inclusive, consortium-supported network of researchers and practitioners communicating and meeting (also virtually) regularly to support each other, share experiences, learn, build knowledge to promote and work towards institutional change for GE; the 'know who'. The community is external to the supporting consortium.
<i>Practice</i> Frameworks, ideas, tools, information, styles, language, stories, documents that community members share, developing knowledge in the domain.	Shared knowledge developed through data collection, analysis, synthesis; documentation of national and institutional contexts; participation in workshops and thematic discussions of experiences.	Shared knowledge and best practices for increased competence in the design, implementation, monitoring and evaluation of GEPs and GE agenda for institutional change; workshops, thematic discussions, conferences, contributions to the Knowledge Sharing Hub online platform; the 'know how'.

(with 10 members) and other gender equality and research (GERI) projects, where membership is highly formalized and pegged to the funding, with only the core beneficiaries partaking. Lastly, the *ACT Practice* is thus substantially enriched and enlarged to account for the sheer diversity of its members and contexts and encompasses an assortment of both GEP implementation and the less formalized GE efforts for institutional change. The conceptual framework of domain, community and practice undergirding CoP and its applications in GenderTime and ACT is illustrated in Table 2.

We acknowledge that other GERI projects could be analysed as CoPs or communities of learning, even though they are not explicitly labelled as such. However, the key difference between such projects and the CoPs presented in this paper is that the CoPs supported through ACT are not the direct funding beneficiaries and lie outside the formally funded consortium. This allows flexibility in terms of the communities' size and scope, increased accessibility of those institutions who would not normally be able to secure EC funding, and it fosters an organic emergence of CoPs. This enabled the ACT CoPs to grow exponentially to over 130 members. The ACT project was built on the basis of GenPORT,⁹ a virtual community-sourced internet portal for sharing knowledge and inspiring collaborative action on gender and science. ACT took GenPORT one step further by cultivating and providing for key aspects of a CoP, such as relationship building or collaborative problem solving. Crucially, the collaborative learning process of 'thinking together' is what brings CoPs to life (Pyrko et al., 2017).

Materials and methods

The seven CoPs

This study is based on the experiences of seven established CoPs within the ACT project. The project was ambitious for several reasons. Firstly, the CoPs brought together different types of institutions to promote GE and implement GEPs. For example, vast universities with thousands of employees and tens of thousands of students worked with small research institutes to share experiences of institutional change. Secondly, in most cases, the RFOs and RPOs worked not only with qualitatively different organizations (due to size, main activities, organizational structure), but also for most CoPs their cooperation

transcended the national, legal and policy contexts within which the research organizations were embedded. Thirdly, the aim of the project was to effect change at the institutional level, but the main vehicle to do so was by developing an inter-institutional support infrastructure. The seven CoPs (see [Table 3](#)) emerged organically through expressing interest in membership during a community mapping exercise to gain knowledge on existing GE practices in RPOs and RFOs, their networks, needs and support (Reidl, Krzaklewska, Schön, & Warat, 2019). The CoPs were heterogeneous and either based by discipline, geography, theme, or type of organization and principal activities. These domains emerged collaboratively and were identified by the members themselves. At the time of data collection, the project had a total of 132 CoP members from 26 countries: around half from universities, a third from RPOs, 14% from RFOs, and 4% from networks. Each CoP had between 10 and 34 member institutions, in some instances with more than one person per member institution. The consortium was composed of nine core and eight seed partners. Core partners concentrated on the production of tools and services and were tasked with the management and execution of the project. Seed partners focused on the development of CoPs and providing support and mentoring through a dedicated facilitator. Each seed partner had experience of institutional change and was responsible for establishing a CoP based on the identified domains. Therefore, whilst the CoPs' foci had developed organically and collaboratively, the functioning of CoPs had formally established elements to foster impetus for engagement, that is, CoPs were provided with resources to hire a facilitator, online infrastructure (webpage, facilitation methods, a customizable GE audit monitoring tool), and support for organizing online and face-to-face meetings. While most institutional CoP members were not part of the funded project consortium, they collaborated with the CoP facilitator (consortium member) and were tasked to mutually define the CoPs own objectives, agenda, and internal rules of conduct.

The role of the CoP facilitators was key to ensuring the good functioning, success, and sustainability of the CoPs (Pedersen, Boyd, Rooney, & Terkes, 2017). The facilitator coordinated and supported the CoP's activities using asynchronous and synchronous tools, provided updates, and promoted it by sharing its purpose and mission with a wider audience (for example, social media, conferences). The seed partner guaranteed a substitute if the facilitator was unavailable to ensure continuity. CoP members signed a memorandum of understanding (a statement of intent, not legally binding on either party) to engage in the ACT CoP and demonstrate commitment to implement specific GE actions, that is, having a detailed agenda with established achievable goals, sharing lessons and experiences of institutional change, and helping to develop tools and knowledge for dissemination.

Interview data and participants

The findings in this article are based on 28 semi-structured interviews with 10 CoP facilitators (four CoPs had one facilitator each, three CoPs had two facilitators each, interviewed in tandem), and with CoP members (three per CoP).¹⁰ Conducted between May and July 2020 via online calls, the interviews lasted between 30 and 90 minutes, and aimed to evaluate the CoPs from the participants' and facilitators' perspective. The interview guidelines were designed to evaluate the ACT CoPs' development and learning outcomes and the full study results were presented in a confidential report as a deliverable to

Table 3. The ACT's seven communities of practice.

CoP name	Domain	Number of member institutions
Alt+G	Alternative Infrastructure for Gender Equality in Slovenia	20
FORGEN	Funding Organizations for Gender	16
GEinCEE	Gender Equality in Central and Eastern Europe	15
GenBUDGET	Gender Budgeting in Research Organizations	10
GENERA	Gender Equality in Physics and Beyond	34
LifeSci	Gender Equality in Life Sciences	25
STRATEGIES	Strategies for Sustainable Gender Equality	12

the EC. In selecting the interviewees, emphasis was placed on the diversity of the organizations they represented, in terms of organization size, type of organization (HE, RPO/RFO, network) and region. The vast majority (86%) of the interviewed CoP members were female and/or in research positions; others worked in HR departments and/or as GE officers. The interview guideline addressed interviewee career background, involvement in CoP activities, and views on the impact and benefits of CoP participation, as well as the limitations of the CoP approach and further needs in terms of organizational GE work in R&I.¹¹ The CoP facilitators were all female; half of which had a formal education in gender (for example, gender studies), and the rest in social sciences, humanities or natural and life sciences, but had developed their gender knowledge from work and being involved in change projects. The facilitator interviews were conducted using a dedicated interview guide¹² focusing on career background, CoP activities so far, cooperation and communication culture in the CoP, feedback on provided tools, benefits and limitations of the CoP approach and further needs. The interviews were recorded and transcribed. To protect confidentiality, we did not disclose which CoP the interviewed member (M) participants belonged to, and used numbers instead (for example, CoP1_M1).

The data were analysed using template analysis (Brooks, McCluskey, Turley, & King, 2015) and conducted in Nvivo. Two co-authors initially identified two broader sets of codings from the interviews in relation to 'facilitating' and 'hindering factors' for GE interventions (or GEP implementation). The leading author then used the ten-factor framework for GE interventions as the basis for *a priori* codes (Palmén & Kalpazidou Schmidt, 2019), however, new codes were created to capture the idiosyncrasies of GE interventions and/or GEP in the context of the CoP approach. Here, we solely focus on illuminating how the participants responded to the factors (Palmén & Kalpazidou Schmidt, 2019), and how they felt CoP membership helped or failed to alleviate the challenges they encountered.

Results

Individual agency and activism

One of the recurrent themes was related to the individual members' agency and activism in the domain of GE in their institutions and beyond. This theme is evocative of Scully and Segal (2002) 'employee activism' as people attempt to promote social change through transforming the agenda, increasing diversity, and reducing inequality in the workplace. This theme frequently appeared in discussions around limited or no resources provided by top management to advance GE and institutional change, such as no recognition of the additional responsibilities in the workload, no additional time or budget provided, or not appointing specific staff members to fully commit to the issue. To circumvent this structural hinderance, the individual CoP members showed significant levels of self-sacrifice and lone activism to progress the project:

I have to find time for that without any special budget. Sometimes it seems to me they treat that as very advantageous to me that for example I can participate in the meetings and I go to [city] or somewhere. But they don't see that if I do that, my other responsibilities might be neglected, and I can do that during weekends or so on. [CoP6_M1, female researcher]

Personally, I have a quite long history in wellbeing, diversity, equality and inclusion [...]. Actually, it takes very much of my time from research, other studies and teaching. Because of this, I have made an agreement to devote more time for research on this instead of teaching. [CoP7_M1, female researcher]

Participants took a personal responsibility for advancing GE, which often meant they had to strategically sacrifice other obligations and accommodate CoP membership around everyday tasks, even encroaching into personal time and affecting work-life balance. The interviewees suggested that engaging in these non-contractual initiatives diverted them from the institutionally valued activities of research and scholarship. Some participants were told by management it was their decision to engage in GE issues, and the onus was on them to find appropriate support and time. This was echoed by other participants, as the individuals were often volunteering their

spare time: 'That goes for so many people who work in GE and other inclusion and diversity-related cultures where there is a level of activism there' [CoP1_M3, male HR officer].

Many participants reported that the CoP project was one of many similar initiatives they were invested in, and that they perceived themselves as change agents with a continuous interest in GE and institutional change. The experience, skills, connections, and resources they had gained in previous actions helped them to crosspollinate ideas, share knowledge, and facilitate learning – a key feature of CoP. An example of how the support of CoP was perceived in response to resistance was provided by a participant affiliated to a regionally operating CoP:

[...] is one of those countries in Central and Eastern Europe. What I see is that European level initiatives [...] focused on gender equality came to those countries, but very slowly and not many institutions are involved and [...] have the opportunity to do something. [...] in this region, there is not much of interest in gender equality and, yes, people are somehow resistant. I thought it is very important somehow to take this opportunity. And I think it is important that this community of practice is focused mainly on this region. [CoP6_M3, female researcher]

Resistance linked to the dominant political ideology in countries or parts of a country (for example, populist, conservative, strongly religious states) was reported by participants as culturally spread or historically embedded into HE institutions. Thus, developing a mutual understanding around these issues among CoP members from these geographical areas and supporting each other was important, as activism for GE spurred the actors to engage and push forward.

Leveraging credibility and legitimacy

Other examples of resistance were reported, such as GE activities not being recognized as contractual and academic tasks, and not valued in evaluations of portfolios for career advancement; gender fatigue (Kelan, 2009); gender inequality issues being misinterpreted and misunderstood, or seen as taboo. In extreme cases, bullying and dismissal of people involved in GE or who had complained about gender discrimination were mentioned. One participant felt that top management did not perceive the problem of gender inequality in their institution as legitimate, however she felt her career thrived thanks to the connections she had made through GE networks and the CoP. Drawing on their personal credibility the participants had developed in the past GE projects and the CoP membership helped to enhance legitimacy and credibility to gain top management commitment:

Every time that I am able to show that I was part of a gender project, I am still part of this project, I am still working on this. Showing the time that you are dealing with these issues and showing that to my colleagues and the committee, the rector, the vice rector that the University is still in this group, is taking part in this process for a long time. This helps your credibility. You are trusted. You are not just the person who teaches gender equality at the students. You are part of this governance project, European project, national project. [CoP4_M3, female researcher]

Credibility was also bolstered by being affiliated to the EC, an external agency seen by top management as prestigious, authoritative, progressive and affording legitimacy to the work. Participants found that starting conversations around GE in their institutions was greatly facilitated when they mentioned the funder:

[I]t's very different if I say, me and the five colleagues have this mailing list and where we really try to help each other, but if you say, me and five colleagues are on this mailing list that is also part of a H2020 project, then you say ok you got my attention. You know, it's different. It makes it, it puts more weight to the content. [CoP2_M2, female researcher]

The clout of the international team of European collaborators was used by the CoP members to signal legitimacy and credibility. Other strategies for tackling resistance were drawn from the support and advocacy provided by the more advanced community members:

Several months ago, I wrote an application to the research council for funding a conference also focused on this topic. So again, I wrote to our leaders in that CoP and they responded with letters of support and those things. Yes, a lot of different benefits. [CoP6_M3, female researcher]

Experiences of leveraging credibility and legitimacy suggest that even though the change agents might have been isolated at the institutional level, the support drawn from the CoP enabled them to benefit from being part of the community (Barnard et al., 2016) and augmented their individual efforts and agency to promote GE within the institutions.

Generosity of knowledge sharing and community learning

Participants frequently referred to the fundamental pillars of CoP, knowledge transfer and sharing best practice among members. The interviews illuminated the experiences of learning from other CoP members who had already implemented GEPs or had significantly progressed their GE agenda. The focus of CoPs was often around finding suitable methods, resources, and ideas for implementation and accessing the expertise of others who had already succeeded. However, learning occurred at different levels, that is, CoP members felt they personally benefitted from building their knowledge and having access to support networks, but also the institutions involved benefitted from knowledge transfer and staff training. For instance, one participant explained how she took a personal responsibility to pass her knowledge onto her colleagues who were the successors of the GE agenda in her institution:

This is an informal network, for us, we are not paid to do it, but still, supporting your colleagues might mean that in the future somebody will support you, so, or you will have knowledge to support younger colleagues. [CoP2_M3, female researcher]

Another CoP member suggested there were significantly different levels of advancement in GE among CoP members, which enabled relevant knowledge to be cascaded to the less experienced institutions:

I stopped breathing when I heard their activities, and what they do on what levels [. . .]. It is still planned to invite them and give trainings to our administrators and researchers [. . .]. Other institutions [. . .] they are just starting, neither have any experiences, no knowledge and a lot of things are very new for them. It is a very good possibility to share experience, knowledge and yes, the CoP is still planned to be expanded. [CoP6_M3, female researcher]

Participants perceived that they benefitted from CoP membership, as it helped them to gain an insight into best practice implementation and to access and further develop each other's level of knowledge. One CoP facilitator described their strategy to draw on good practices introduced in other RPOs in the members' ecosystem to receive support for GE implementation from top management. Ambitions and benchmarking against other institutions were used as a tactic against resistance from management, especially in institutions only beginning to establish a GE agenda. There was a sense of earnest generosity of knowledge sharing, exchanging experiences and best practices among the community as a tool to advance institutional change, and promote equality.

Divergence of members and contexts as a CoP challenge

From the data, one challenge emerged for the CoPs given the transnational and multi-institutional nature of the project. Namely, participants reported that the diversity of members, faculties, disciplines, and contexts sometimes hindered mutual understanding, finding solutions and best practices relevant for all. This occurred even though the seven CoPs co-defined themselves thematically and geographically to facilitate harmony and approximation of challenges. One participant reported that the unique character of their member institute meant that applicable knowledge exchange was challenging:

I think that maybe the weak point of that CoP from my perspective is that almost all participants are from universities, so I think they are bigger institutions with departments, staff, students so their perspective is completely different. [...] So sometimes our perspective is completely unknown to them. I think that maybe other problems are rising [in] that kind of environment. [CoP6_M1, female researcher]

Additionally, the internal contextual diversity within a single member was also reported as problematic. For instance, different departments, faculties, and schools within one university required customized solutions, because they were in some ways independent. This made the process 'very complicated [with] a lot of layers of complexity' [CoP5_M1, female HR officer], internal and external policies, and the diversity of stakeholders, such as clinical staff, doctors, nurses, researchers. Where member institutions were grouped into thematic CoPs, the more advanced members located in countries with more progressive and liberal attitudes to GE felt that the geopolitical diversity of the members was also crucially important when instigating change.

Discussion

Our study has shown that the GE agenda and any possible GEP implementation for institutional change rely not only on the structures of stable governance frameworks, legislation, resources, and external incentives (Palmén & Kalpazidou Schmidt, 2019), but also on the individual agency and activism of a few passionate individuals in institutions often with no collective force or voice to systematically challenge the status quo. This finding resonates with Bendl, Danowitz, and Schmidt (2014) in that GE activism is 'currently more subtle and less visible, but still alive and far from dormant through networks, micro-politics, and everyday practices in non-social movement organizations like universities' (p.330). Their case study in an Austrian university showed that overt collective political action has been recalibrated to piecemeal individual employee engagement and equality activism, and that this occurred due to changes to governance, and the increasing influence of management, or 'new managerialism' in HE in nearly all OECD countries. Bendl et al. (2014) argue that the shift from collectivist to individual action is the result of achieved goals by strong feminist collectives that have led to the top-down institutionalization of GE that has written equality policies into organizational strategies, set within frameworks of a larger purpose-driven instrumental rationality. However, our findings show that this individualistic action was not the product of the successes of previous collective effort and thus its obsolescence, but often it was the result of resistance, apathy, a lack of resources needed for bigger institutional change, and sometimes a harsh ideopolitical climate in member institutions even within the OECD member states.

Our study contributes to our understanding how these lone, but fiery souls can be sustained and energized, as their affiliation with an external CoP supplemented and supported them through a much-needed collective identity and a sense of belonging, where knowledge and best practices could be exchanged. CoPs offered a retreat to seek mutual appreciation of similar problems related to limited resources, strategies against resistance, and provided a low-risk 'safe space', which is evocative of the findings proposed by Hakkola et al. (2021), highlighting CoP as an effective model for equality-minded change and its perils. The individual CoP members in institutional work settings may be good illustrations of 'micro-mobilization' (McAdam, 1988), where agents coalesced not necessarily around internal groups in a single organization, but rather externally to benefit from a shared sense of how to promote social justice (Scully & Segal, 2002). Having a collective 'reservoir of safety' in a CoP (Hakkola et al., 2021) allows change agents to redefine their situation in new terms and recognize that a problematic condition is not an issue of an individual person or organization, but a systemic issue of institutionalized inequality (Scully & Segal, 2002). This also reflects the benefits of group negotiation of meaning which can be fostered through CoPs, as 'there is a need for creating spaces for the negotiation of the fundamental premises where members involved in common goals can mutually engage' (Annala & Mäkinen, 2017, p. 1954). As Meyerson and Scully (1995, p. 586) suggested, outside affiliations can provide a sense of independence, or a source of self-esteem to 'tempered radicals', who are committed both to their organization, and an ideology fundamentally different from its dominant culture. As an example, in a locally anchored CoP, where the shared ideopolitical context of anti-genderism was formidable and enduring, strategic geo-

grouping of the member institutions appeared to be a successful and effective approach to develop alliances, solidarity and build on the mutual awareness of the challenges and problems to overcome in that region.

Our findings also illuminate how credibility and legitimacy of change agents were negotiated and strategised to secure support from top management, and colleagues (bottom-up commitment) through the association with the ACT CoPs, European networks, and prestigious funders. In this sense, the EC was acting as an 'honest broker' for GE efforts, a convening organization, whose patronage facilitated the agenda and collaboration among member institutions and boosted legitimacy and status of the project and its members. To tackle resistance, credibility and trustworthiness were also derived from the individual CoP members and their visible and continuous track record of GE work (Ford, Ford, & D'Amelio, 2008). This finding resonates with Armenakis, Harris, and Mossholder (1993) in that 'the effectiveness of the influence of strategies is dependent upon the change agent wielding them' and that credibility, trustworthiness, sincerity, and expertise are 'gleaned from what people know about the agent and their reputation' (p. 690). The involvement of individuals who possess gender expertise facilitates GE work and identification of superficially neutral institutional processes that in fact reinforce structural differences (Kalpazidou Schmidt & Cacace, 2019; Palmén & Kalpazidou Schmidt, 2019). This individual gender expertise of change agents was further amplified through the earnest generosity of knowledge transfer and sharing best practices within the CoP. This was particularly important in the context of limited support and knowledge that could be harvested internally from the members' institutions. As posited by Hearn and White (2009), CoPs can provide a wide range of perspectives on a problem, and 'ensure that relevant knowledge is accessible to those who need it' (p. 2).

CoPs may, thus, foster institutional change for GE, as it is dependent upon an effective sharing of experiences, learning and knowledge creation. Kalpazidou Schmidt and Cacace (2019) have argued that these activities have been identified as a crucial component of GE initiatives in research organizations. This is also particularly important for increasing the potential for sustainability of actions as cultivating GE knowledge within an organization is required for long-term goals Commission. The CoP members might prove to be the driving force for continuity, and cumulatively embody a 'storage container' (van den Brink, 2020) retaining the supportive context provided by the community, networks, tools, the knowledge gained, skills and experience, even when the project funding period ends. This is crucial to ensuring that lessons learned are stored in organizational memory and they do not need to be continually re-learned (van den Brink, 2020). Instrumentally, the CoPs helped to transfer the knowledge needed to foster institutional change through the particular members *in situ*. Moreover, they provided the intrinsic value of further learning and development of the agents in GE issues, who benefitted at the individual level, and leveraged this advancement into credibility and trust building. Thus, both learning 'in itself', and learning to derive an extrinsic value of institutional change were facilitated in the CoP membership.

Lastly, our study demonstrated one potential challenge of the CoP approach. The aim of the project was to support the creation, development, and consolidation of locally and/or thematically anchored CoPs given the importance of context when instigating institutional change. The CoPs' foci emerged with the premise that members were better placed to negotiate a shared interest that was meaningful to their local organization and the cultural context. However, there was still a level of divergence between the members and contexts within singular CoPs, as the very nature of the co-designed CoPs was the transcendence of the focus on single institutions out into external, and in many instances, transnational contexts to foster institutional collaboration. Nevertheless, the diversity of GE advancement levels across CoP member organizations was mostly beneficial both to the less experienced institutions now enabled to learn (Barnard et al., 2016), as well as the more experienced members, who could enhance their status through cooperation and coordination of smaller spin-offs. The findings illuminated a sense of earnest generosity of knowledge sharing, exchanging experiences and best practices among the community as a tool to advance institutional change. The less advanced organizations did not want to fall behind in GE work in the highly competitive HE and R&I environment. We argue this is more than 'institutional isomorphism', that is, attraction to institutional rules, and the need to 'compete' and 'imitate' (Beckert, 2010). This is because CoPs did not only benefit the recipients of knowledge and learnings or best

practice models (Meyer & Rowan, 1977), but, as our findings show, also the more experienced members who generously 'donated' their knowledge and resources as part of their individual agentic and activist drive for social justice. Thus, the CoP approach can help to cascade effective institutional change interventions for GE across national boundaries, through such professional networks, by homogenizing cognitive and normative expectations (Quack & Djelic, 2005), which the CoP members utilize to tackle gender inequality in their home institutions.

Conclusion

There is a pressing need to transform HE and research institutions into structures that are gender equal. Implementing GEPs or even beginning a change journey undoubtedly requires favourable organizational and processual level factors for effective transformation. However, GE work is still too often contingent on the activism of a few passionate individuals. Our study has shown that these critical change agents greatly benefitted from an external group support offered through CoP membership. Equality work in institutions with historically ingrained structural injustices can be a risky endeavour and this paper has illuminated that CoPs offer a safe and legitimate space to bond over challenges, share knowledge, and collaboratively develop transformative practice.

Notes

1. Horizon 2020 Work Programme 2014–2015, 16. Science with and for Society: https://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/main/h2020-wp1415-swfs_en.pdf
2. The H2020 project ACT – Communities of PrACTice for Accelerating Gender Equality and Institutional Change in Research and Innovation across Europe: <https://act-on-gender.eu/>
3. EFFORTI project: <https://efforti.eu/>
4. GEDII project: <https://gedii.eu/>
5. GE Academy project: <https://ge-academy.eu/>
6. SPEAR project: <https://gender-spear.eu/>
7. TARGET project: <https://www.gendertarget.eu/>
8. Gender-Time project: <https://gendertime.org/>
9. GenPort project: <http://www.genderportal.eu/>
10. It is confirmed by the Head of the Ethics Board at JOANNEUM RESEARCH, the partner responsible for conducting the research, that all the research processes conducted for the purposes of this article meet the JOANNEUM RESEARCH and the GDPR standards. All participants signed an informed consent about the purpose of the study. All the ACT project internal rules are followed in this manuscript.
11. For the detailed interview guide for CoP members see annexe 1.
12. For the detailed interview guide for CoP facilitators see annexe 2.

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Annex 1: Interview guideline for CoP members**Introduction**

Thank you for being available for this interview in the context of the evaluation of CoPs in the ACT project. Joanneum Research is a partner in ACT and within the project responsible for an accompanying evaluation:

The aim of the evaluation is to identify the added value of membership in a CoP and to figure out what works well and what needs to be improved to increase the effectiveness of CoPs for their members. The following topics will be addressed: -CoP activities so far -effects/benefits und limitations of the CoP -further needs from your point of view. Please answer all questions as openly as possible, we guarantee to treat them confidentially. To facilitate the analysis of this interview, we would like to audio tape it. The interviews will be used for analysis only in an anonymized way and stored in a password-protected folder and deleted after the end of the project. Am I allowed to audio tape the interview?

Personal background of CoP members

First of all, could you please give us a small description of your person?

What is your responsibility in your organization?

What was your major motivation to join the CoP? What do you expect from the CoP?

Was your organization interested in becoming a member of the CoP or did you need to convince the management?

How have you been involved in the CoP?

CoP Activities (immediate value)

Could you please briefly describe the main features and characteristics of your CoP?

What are the main goals from your point of view? How did the goals come about?

Set-up of the CoP: How does the CoP work? How are tasks allocated? How are decisions made? Are there any internal regulations?

Please describe briefly the activities in your CoP.

In which activities did you participate?

Which topics were the most prevalent in your CoP? And for you?

Which challenges regarding structural change to foster GE where discussed so far? Where there solutions proposed in the CoP?

How would you assess the communication culture in the CoP?

Do you communicate with other CoP members or with the CoP facilitator outside the meetings? With whom did you interact or make connections? For what purpose?

How would you describe the culture of the CoP? How would you describe the integration of new members?

How does it work to have members from universities, networks, associations and research institutions? How does the cooperation work? Do they have different needs, topics . . . ?

How would you describe the cooperation with the other organizations in the CoP?

How would you describe the involvement with/of the other organizations?

Would you say that the CoP helped to establish a sense of community?

Where have you seen some collective action or practices?

Are there groups inside the CoP or is everyone more or less equally connected?

Did you have also one-to-one meetings with the CoP facilitators? About what? Which aim?

How would you assess the competence of the facilitator? -to moderate and manage the CoP -to support regarding GEP implementation

What was your experience with the provided tools (on the website but also GenPORT+, GEAM tool, . . .)? Which ones have you been using and how did you like them?

You have not mentioned XY, how come?

After some time you received a GEP audit tool by your facilitator. How helpful would you rate this report?

In which contexts did it prove helpful?

Where would you have needed further personal assistance?

Do you receive a newsletter from the CoP? Is it a useful feature of a CoP?

Effects/Benefits & Limitations/Further needs

Where do you notice that the CoP has brought some change?

How did you personally benefit from participating in the CoP?

How has your participation changed you?

Have you acquired new skills or knowledge? Do you feel more inspired by the work you do? Have you gained confidence in your ability to engage in practice?

How has your participation changed your social relationships?

What access to new people have you gained? Do you know them well enough to know what they can contribute to your learning? Do you trust them enough to turn to them for help? Do you feel less isolated?

(Continued)

Annex 1: (Continued).

What access to resources has your participation given you?

Do you have new tools, methods, or processes? Do you have access to documents or sources of information you would not have otherwise?

What position has the community acquired?

Has the community changed the recognition of your expertise? Have you acquired a new voice through our collective learning?

How do you communicate the contents and learnings from the CoP into your organization? How does this knowledge transfer work?

How did your organization benefit from participating in the CoP?

What difference has it made to your work practice?

Where have you used a product/tool of the CoP? Where did you apply a skill you acquired? When did you leverage a community/network connection in the accomplishment of a task?

What difference has it made to your ability to achieve what matters to you or other stakeholders?

Did you save time or achieve something new? Are you now more successful in implementing gender equality activities? How?

Has it changed your or other stakeholders' understanding and definition of gender equality in your organization?

Has the process of social learning led to a reflection on gender equality in your organization? How has this new understanding affected those who have the power to define criteria of success? Have any structural changes already been made?

How could you benefit from the interaction/interchange with other organizations? How could you benefit from the facilitator?

Would you say it was a collective learning experience or rather a learning from the experiences of the facilitator?

With which problems/issues/topics could the CoP help you i.e. your organization the most?

Were there relevant topics of yours that could not be addressed in the CoP? Why not?

How was it possible to achieve benefit?

What were the relevant success factors?

What should be improved regarding the implementation to increase the benefit?

How would you assess the cost-benefit ratio for your organization to participate in the CoP?

How much effort does it cost you to participate in the CoP?

What is required beyond the CoP to successfully implement gender equality activities?

What problems could the CoP not help with? What else would you need? From whom?

What was the most rewarding part of the CoP? What is the added value? What would you tell other organizations that are thinking about joining a CoP?

Do you think the CoP will continue its interchange after the ending of the project?

Why? Who will invest time in prolonging it? Why not?

What would be needed to support a further cooperation?

Could you imagine that your University pays a fee to be member of the CoP? Which amount would be conceivable?

How does the COVID-19 development influence your involvement in the CoP?

Annex 2: Interview guideline for facilitators**Personal background of the facilitator**

First of all, could you please give me a small description of your person?

What is your responsibility in your organization?

Were you hired for the job as a CoP facilitator or were you previously employed in this organization? At which hierarchy level? With what kind of contract (short term/unlimited)?

Could you give us a brief description of your previous experience with gender equality/organizational change?

CoP Activities

Could you please briefly describe the main features and characteristics of your CoP?

Main goals - How did the goals come about?

Set-up of the CoP: How does the CoP work? How are tasks allocated? How are decisions made? Are there any internal regulations?

Which structural change issues have been addressed in the CoP so far? Which of these have been addressed by members?

Which challenges do members face when dealing with structural change – what are their needs?

Which solutions for these challenges were proposed by the CoP?

(Continued)

Annex 2: (Continued).

How would you describe the development of your CoP?

In the CoP Monitoring you indicated that your CoP was in the CoP lifecycle-phase ' . . . ' In October 2019. Where is it now? Are you satisfied with this development?

In the CoP Monitoring you indicated that your CoP focused in October 2019 mostly on 'Main Area of Activity', did the priorities change? Why? Why not?

How would you describe the cooperation between the CoP members?

How would you describe the involvement of the individual organizations?

Would you say that the CoP established a sense of community?

How would you assess the cooperation between newcomers and people that already knew each other from previous cooperation?

How does the cooperation work between people with gender experience and gender newcomers, if there are any?

Were there any conflicts or disagreements, and if yes, how have you dealt with them?

How would you assess the communication culture in the CoP?

Do CoP members interact and collaborate beside the CoP activities? And does this feed back into the CoP again?

Is the workspace on the CoP website frequently used by the members or do you communicate on other channels? Why?

Which methods did you use so far to support collaboration?

How did these tools influence the communication culture and cooperation?

How would you rate the helpfulness of these tools to support interaction between the CoP members? What else would you need?

What was your experience with the technical tools (GenPORT+, the survey tools, . . .) to foster structural change?

You have not introduced the CoP to tool XY so far, how come?

Effects/Benefits & Limitations/Further needs

How and what do members of your CoP learn through the CoP (and its members)?

Where are CoPs helpful – for which problems? How do members benefit from participating in the CoP?

Where are limits of a CoP approach to foster institutional change

What else is needed to enable CoP members to successfully foster structural change regarding GE?

Where do you notice that the CoP has brought some change? -in the organizations of the CoP members – do members report about effects of CoP activities visible in their organization? What are these? -on the individual level of participants -in the community (e.g. visibility of the GE topic)

What are your learnings as a facilitator about implementing CoPs?

What works well to support collaboration, what does not? What should be improved regarding the implementation to increase the benefit for the CoP members?

Which issues and obstacles have arisen in (further) developing CoPs and which strategies did you develop to encounter them?

What is needed and helpful to develop a CoP? Are the available resources sufficient?

What kind of support do you get in your work as CoP facilitator? And how important is this support? -From your organization - From other CoP facilitators -From the ACT consortium

What kind of further support would you need? From whom?

How would you assess the preparation for supporting a CoP? Were you prepared sufficiently or what would you have liked to know beforehand?

What has been done so far to ensure that the CoP will continue to exist after the end of the project period?

What would be needed to support a further cooperation?

In your opinion: does the CoP have the expected effects so far?

How does the COVID-19 development influence the cooperation and activities within the CoP?
