Seismo
Swiss Journal of Sociology, 52 (1), 2026, 121–151

Innovation Diffusion in Large, Heterogeneous Populations: A Group-Level Network Approach

Malte Doehne* and Katja Rost*

Abstract: Asymmetries in influence between subgroups and the radicalness of innovations predict innovation diffusion in large, heterogeneous populations. Using 35 491 job ads and data on 522 978 managerial appointments to 739 092 firms, we study the diffusion of two organizational practices across the Swiss labor market. Gender-neutral language use spread widely from core to periphery, while "almost-full-time" employment schemes originated in the periphery and diffused narrowly. We discuss these patterns' implications and identify avenues for future research.

Keywords: Diffusion of innovation, macro structure, diffusion of organizational practices, labor markets, gender equality

Diffusion des innovations dans les populations hétérogènes de grande taille : une approche en réseau au niveau des groupes

Résumé : Les asymétries d'influence entre sous-groupes et la radicalité des innovations prédisent la diffusion de ces dernières au sein de grandes populations hétérogènes. À partir de 35 491 annonces d'emploi et de données sur 522 978 postes de direction dans 739 092 entreprises, nous étudions la diffusion de deux pratiques organisationnelles en Suisse et en discutons les implications. Le langage non genré s'est diffusé rapidement du centre à la périphérie, tandis que les régimes « presque à plein temps » ont émergé en périphérie et ne se sont propagés que de manière limitée.

Mots-clés : Diffusion de l'innovation, macro-structure, diffusion des pratiques organisationnelles, marchés du travail, égalité des sexes

Innovationsdiffusion in grossen, heterogenen Populationen: Ein gruppenbasierter Netzwerkansatz

Zusammenfassung: Asymmetrien im Einfluss zwischen Subgruppen und die Radikalität von Innovationen bestimmen deren Diffusion in grossen, heterogenen Populationen. Anhand von 35 491 Stelleninseraten und Daten zu 522 978 Führungspersonen in 739 092 Unternehmen untersuchen wir die Diffusion zweier organisationaler Praktiken im Schweizer Arbeitsmarkt. Während geschlechtsneutrale Sprache breit aus dem Zentrum diffundierte, verbreiteten sich „fast-Vollzeit"-Modelle nur begrenzt aus der Peripherie. Wir diskutieren gesellschaftliche Folgen und identifizieren Forschungsbedarf.

Schlüsselwörter: Verbreitung von Innovationen, Makrostrukturen, Diffusion organisationaler Praktiken, Arbeitsmärkte, Gleichstellung der Geschlechter

* University of Zurich, Andreasstrasse 15, CH-8050 Zürich, malte.doehne@uzh.ch, katja.rost@uzh.ch.

DOI 10.26034/cm.sjs.2026.6108

1 Introduction

A vast body of research explains why some ideas, practices, and technologies spread rapidly and widely while others remain confined to niches (Naumovska et al., 2021; Rogers, 2010 [1963]; Wejnert, 2002). Typically, this literature models structural barriers to diffusion at the individual level, conceptualizing adoption thresholds as actors' willingness to adopt an innovation conditional on the behaviors of others (Centola, 2018; Granovetter, 1978; Macy, 1991; Valente, 1996; Young, 2009). Extending this view to large, heterogeneous populations, we develop a group-level network approach that analytically decomposes heterogeneous populations into smaller, interconnected subgroups. This approach identifies intergroup connectivity and core–periphery status differentials—both macro-level features of an innovation's diffusion structure—and the normative orientation of innovations (i. e., whether an innovation is symbolic or contranormative) as important predictors of widespread diffusion.

We test this macro-level approach by tracing the diffusion of two organizational practices across the Swiss labor market between 2001 and 2018. The first is *gender-neutral (GN) language use* in job advertisements. This is a symbolic and incremental innovation: it is inexpensive and signals conformity to societal expectations regarding gender equality without materially altering hiring practices. The second practice is to advertise vacant positions with a workload of between 80% and 95%, here termed *almost-full-time employment schemes (AFT)*. AFTs address a key barrier to women's advancement in Switzerland, where part-time work is common and predominantly female. By enabling a better balance between family and career, they open access to managerial roles. In contrast to GN language use, however, AFTs represent a contranormative, radical innovation: they require structural changes within organizations and challenge entrenched norms regarding full-time work. Together, these contrasting innovations allow us to examine how diffusion outcomes are conditioned by the normative orientation of the innovation and the core–periphery status of potential adopter groups.

2 A Model of Innovation Diffusion in Large, Heterogeneous Populations

Innovation diffusion is the outcome of a sequence of adoption decisions made by the members of a population of potential adopters. Broadly, the literature has identified three main drivers of adoption: social learning (Coleman et al., 1957; Granovetter, 1978; Valente & Vega Yon, 2020), institutional bandwagons (Fligstein, 1985; Meyer & Rowan, 1977; Strang & Meyer, 1993), and competitive pressures (Abrahamson & Rosenkopf, 1993; Burt, 1987; Mansfield, 1961). Although these literatures each emphasize different aspects of the diffusion process, they broadly agree that the share of current adopters predicts subsequent adoption. Moreover, each approach has assumptions of mutual awareness and group-level membership deeply ingrained

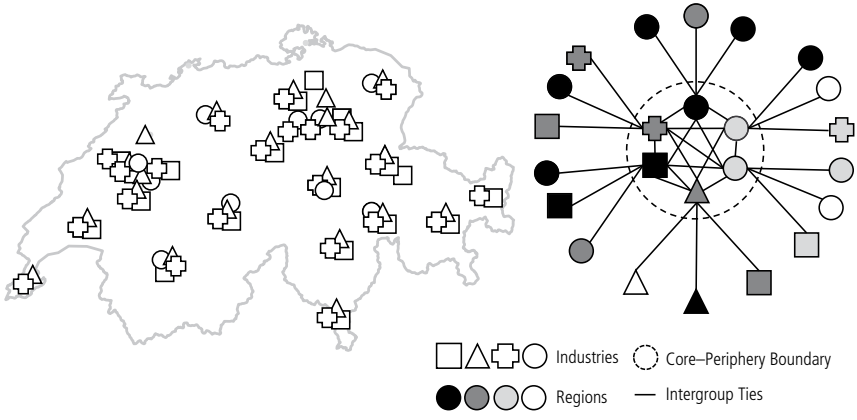
in its main explanatory mechanism: social learning presupposes a basic awareness of one's peers' adoption behavior (Bikhchandani et al., 1992; Secchi & Gullekson, 2016); legitimacy theory applies to organizations that are monitored by the same (or overlapping) audiences (Fligstein, 1985; Strang & Meyer, 1993; Tolbert & Zucker, 1983); and competitive bandwagon theories imply a mutual orientation to one's competitors' actions (Abrahamson & Rosenkopf, 1997).

Cementing this emphasis on defined and largely homogeneous groups, empirical studies often consider narrowly defined populations, such as the households of villages that have been selected for a targeted intervention (Banerjee et al., 2013), physicians in four midwestern cities (Coleman et al., 1966), Iowan farmers (Ryan & Gross, 1943), finance analysts (Rao et al., 2001), credit ratings providers (Vaaler & McNamara, 2004), or the automotive industry (Bohnsack et al., 2020). While such a narrow focus allows one to identify specific diffusion mechanisms, it leaves underexplored how diffusion unfolds in large, heterogeneous populations. This oversight is striking, as the broader societal impact of many innovations depends on their ability to spread beyond the confines of narrowly bounded groups. Moreover, even seemingly homogeneous populations are inevitably embedded in networks of resource and information flows, producing actor heterogeneity that must be accounted for at aggregate levels. At the organizational level, for example, financing modalities, long-term contracts, and the careers of high-level workers embed firms within status-differentiated group-level structures spanning industries and national and global markets (Burt, 1988; Doehne, 2024; Gould, 2002; Sauder et al., 2012; Washington & Zajac, 2005; White, 2002).

Recognizing that large, heterogeneous populations embed individuals in broader structures of resource- and information exchange, we shift our focus from isolated adoption decisions to the diffusion dynamics between subgroups of potential adopters. We focus on interorganizational diffusion as a concrete case, anchoring our argument in a well-established body of research. Our reasoning builds on the observation that reputational mechanisms and status attainment, commonly studied among individuals, also structure flows of resources, information, and workers at higher levels of aggregation, such as groups of organizations (Bidwell et al., 2014; Bothner et al., 2022; Godart et al., 2014; Podolny, 2005), nesting organizations in ecologies of resources that shape individual behaviors and group outcomes (Agneessens et al., 2024; Doehne et al., 2024a, 2024b; Roth & Doehne, 2024). In line with this view, some organizational groups occupy elevated positions in the exchange of goods or recruitment of employees; for example, investment banks in urban trading centers (Bidwell et al., 2014) or elite law firms (Uzzi & Lancaster, 2004), while others cater to particular industries or regions in the periphery. This promotes the formation of stratified hierarchies (Lin, 1999; Podolny, 2005): A few subgroups attain prominent status because exchange with them is favored by many, whereas most subgroups remain relegated to the periphery (Blader & Chen, 2011; Gould, 2002; Malter, 2014; Sauder et al., 2012; Washington & Zajac, 2005).

Over time, the macrostructure of large, heterogeneous populations comes to resemble a core–periphery structure, in which a few highly visible groups form a densely interconnected core, while less prominent groups locate in a weakly interconnected periphery (Abrahamson & Rosenkopf, 1997). The Swiss labor market exemplifies this dynamic: workers are specialized by industry and tied to regions, resulting in restricted exchange between local labor markets. Furthermore, some regions are particularly attractive due to favorable living conditions, while certain industries, such as finance or consulting, enjoy heightened demand from other sectors, sustaining structural asymmetries in exchange relations. Figure 1 schematically depicts this outcome.

Figure 1 The Core–Periphery Structure of the Swiss Labor Market



Source: The authors.

This macrostructure suggests countervailing consequences for the origination and diffusion of innovations. On the one hand, actors in core groups are more likely to encounter innovations early, due to dense interconnections and heightened visibility at the center of the overall network, making them natural candidates for early adoption (Coleman et al., 1957; Rogers, 2010 [1963]). On the other hand, actors in peripheral groups, facing fewer normative constraints and occupying less visible positions, are better positioned to originate radically new ideas, technologies, or practices that challenge the status quo (Cattani & Ferriani, 2008; Doehne & Rost, 2021; Sgourev, 2013). Taken together, these countervailing tendencies shape whether an innovation originates in the core or the periphery, and how it subsequently spreads through the population. Moreover, these dynamics highlight the need to reconsider how different types of innovations—distinguished by degree of radicalness and normative orientation—will spread in status-stratified populations:

Traditionally, the distinction between incremental and radical innovation emphasizes the scope and risk of change: incremental innovations involve minor refinements to existing products, services, or practices, whereas radical innovations disrupt established competencies, categories, and structures (Abernathy & Utterback, 1978; Tushman & Anderson, 2018). However, in status-stratified populations, the normative dimension of innovations and their adoption becomes salient (Meyer & Rowan, 1977; Strang & Meyer, 1993). We therefore refine the distinction between incremental and radical innovations to consider their symbolic and contranormative character. Specifically, we classify innovations that align with prevailing norms and public discourse—and are thus inexpensive to implement and serve primarily symbolic functions—as *incremental, symbolic* innovations. By contrast, we classify innovations whose normative standing is ambiguous, contested, or negative—and that demand validation and often entail significant organizational adjustment—as *radical, contranormative* innovations. While this classification applies broadly to innovations, it is especially salient for the diffusion of organizational practices, whose widespread acceptance and legitimacy generally hinges on their alignment with prevailing societal norms.

Following the received logic of well-established innovation diffusion research, we expect advocacy efforts and legitimacy pressures to be particularly directed at actors occupying highly visible, central positions in the diffusion structure (Deephouse & Suchman, 2008; Rogers, 2010 [1963]; Strang & Meyer, 1993). Incremental, symbolic innovations—those that align with prevailing norms and carry low reputational risk—are therefore more likely to be adopted first by core groups. By contrast, radical, contranormative innovations, whose normative standing is ambiguous or contested, are more likely to originate and spread among peripheral groups, who face fewer normative constraints and can experiment with lower reputational risk (Cattani & Ferriani, 2008; Doehne & Rost, 2021; Perry-Smith & Mannucci, 2017; Sgourev, 2013). As a result, diffusion hinges on both the normative orientation of an innovation and on its point of origin, i. e., on whether it trickles down from the core or must trickle up from the periphery to be adopted widely.

More specifically, we hypothesize that incremental, symbolic innovations will spread readily once adopted by the core. Given peripheral groups' orientation toward core groups, and the legitimating effect conferred by core adoption (Berger et al., 2002; Festinger et al., 1950; Katz & Lazarsfeld, 1955; Rogers, 2010 [1963]), we hypothesize that *incremental, symbolic innovations that trickle down from the core can readily overcome core–periphery differentials and intergroup boundaries and spread widely* (Menzel, 1960). Conversely, radical, contranormative innovations which are first adopted by members of peripheral groups, are initially invested with low normative, symbolic value (Abrahamson & Rosenkopf, 1993, 1997; Becker, 1970; Berger et al., 2002), predicting substantial difficulties in crossing intergroup boundaries. We therefore hypothesize *that radical, contranormative innovations that originate in the periphery diffuse only narrowly*.

Next, we test these assumptions with the example of two organizational practices that have the potential to increase female labor market participation in Switzerland: one symbolic and incremental, one contranormative and radical. These two extreme cases illustrate the countervailing effects of the macro diffusion structure on the spread of organizational practices within the large, heterogeneous population of Swiss firms.

3 Two Organizational Practices that Promote Female Labor Market Participation in Switzerland

Despite overall economic strength and low unemployment rates, Switzerland lags behind several other high-income countries on workplace gender equality (Dutu, 2014; World Economic Forum, 2024). This lag traces to at least three causes. First, Swiss labor market policies have historically favored a single-earner household model, encouraging a specialized division of labor between paid and domestic work. The Swiss standard workweek of 42 hours, for example, is among the longest in Europe and makes it difficult to combine family life with dual careers. Second, the progressive taxation of household incomes taxes second earners at the marginal rate of the primary earner, financially disincentivizing equitable double-income strategies. Third, although statutory maternity leave is three months, state-subsidized childcare is only available from the age of four, requiring families to cover substantial childcare costs during the early years—costs that quickly exceed the added income generated by a second earner. Together, these factors favor a single-earner household model in which one partner downgrades their career ambitions (especially following the birth of children). Among heterosexual couples, this partner has historically usually been the female.

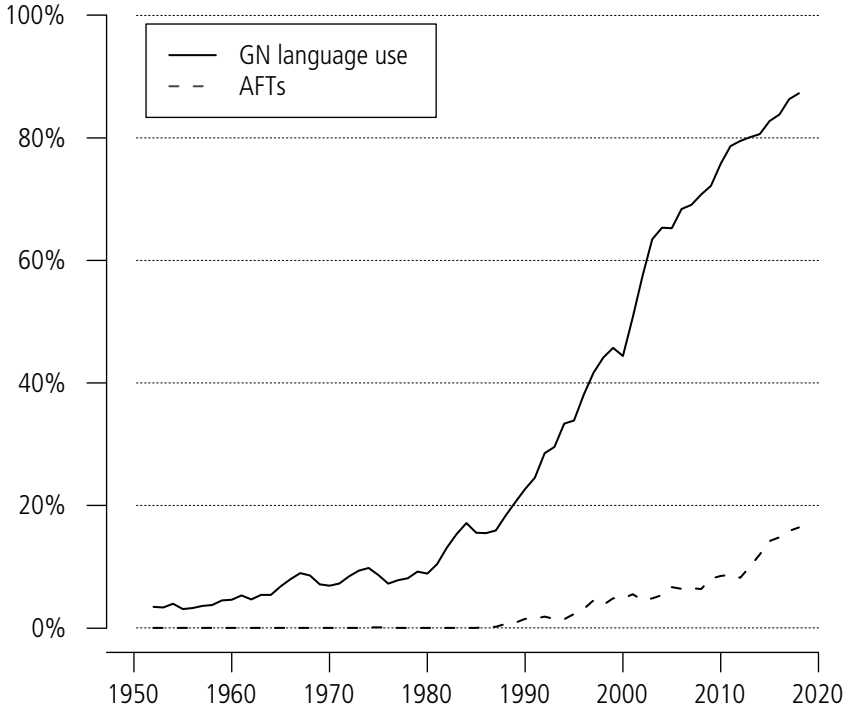
However, the traditional model of a male primary earner is increasingly under pressure. Over the past 50 years, pieces of legislation have been introduced to enforce the equal treatment of men and women on the labor market, in education, and at home (Keller, 2015). Over the same period, the gender gap in educational attainment has narrowed substantially and even turned in favor of women (BFS, 2018; OECD, 2019). Against this backdrop, organizations have been adjusting their hiring practices in various ways. Partly in response to evolving societal demands and partly as a strategy to tap into a growing resource potential of highly skilled female workers, organizations in various industries and regions of the country have begun to adapt their hiring-related practices. Here, we consider two organizational practices that have diffused in the Swiss labor market in recent decades: formulating job advertisements in *gender-neutral (GN) language* and advertising vacant positions in *almost-full-time employment schemes* (AFTs). Both practices exemplify organizational practices whose diffusion have the potential to reshape the existing, gendered structure of contemporary Swiss society. However, they proceed in different ways: whereas GN language use represents a symbolic, normative adjustment to hiring

practices, AFT schemes attempt a more fundamental realignment of work and family life. Neither practice is mandated by law. Before modeling their diffusion dynamics, we offer a brief qualitative description of the two practices.

3.1 The Diffusion of GN Language Use in Job Advertisements

The German language uses separate nouns for male and female employees (*der Pfleger/die Pflegerin,* or *der Manager/die Managerin*). This grammatical feature makes linguistic gender marking visible and codable. As a result, job advertisements posted in German offer a rare opportunity to track the adoption of gender-neutral (GN) language practices over time and across different sectors and regions, enabling longitudinal analyses of how symbolic innovations diffuse through heterogeneous labor markets. Figure 2 depicts the proportion of Swiss job advertisements using GN language since 1950 (the data used for this analysis are presented in more detail below). As recently as 2001, only 44% of all job advertisements used GN

Figure 2 Diffusion of Gender-Neutral Language Use and Almost-Full-Time Employment Schemes



Source: Authors' calculations using full SJMM dataset (N = 45 079 advertisements; 3-year rolling average).

language. This figure had doubled to 88% by 2018. This progressive shift towards GN language has coincided with a period of heightened awareness, activism, and legislation promoting gender equality.

GN language use in job advertisements is a typical symbolic and incremental innovation. Adopting a GN tone can help firms avoid sanctioning by advocacy groups. At the same time, the language used in a job advertisement does not preempt a firm's actual hiring decision, nor need it affect employment arrangements directly. Because this innovation is therefore inexpensive for employers to adopt, we predict widespread diffusion starting at the core of the most prominent subgroups in labor markets. Indeed, qualitative research indicates that organizations in the focus of public attention have been at the forefront of adopting GN language, a process that has been promoted by human resource departments and equal opportunities divisions in large, international organizations (Kalev et al., 2006), consultancies, and politics and industry networks, thereby attaching normative, symbolic value to GN language use (Bohnet, 2016; Herring, 2009). These processes have resulted in the publication of guidelines recommending GN language use to fight gender-based discrimination. By adopting a gender-neutral tone, organizations conform to prevailing norms and can avoid sanctions from advocacy groups without this necessarily affecting their actual hiring practices or employment arrangements (Schoen & Rost, 2021).

3.2 The Diffusion of Almost-Full-Time Employment Schemes

The second innovation is the practice of advertising job vacancies with workloads higher than standard part-time schemes, generally defined as 20% to 75% of a full-time equivalent, but still below full-time (100%). The share of part-time workers in Switzerland is high by international standards, and women in particular work on a part-time basis, often limiting their career progression (Krone-Germann, 2011). The introduction of *almost-full-time employment schemes* (AFTs), defined as positions with workloads between 76% and 95%, offer a potential path to more equitable career trajectories by balancing professional advancement with family responsibilities (Pasamar & Alegre, 2015). For female managers in particular, AFTs may reduce the stigma associated with part-time work and open access to leadership roles (Beham et al., 2020). Unlike traditional part-time arrangements, AFTs are increasingly used for managerial positions in high-skill sectors and are often advertised with flexible ranges such as "80–100%", leaving the final workload to be negotiated by the applicant.

Figure 2 also depicts the diffusion of AFTs in the Swiss labor market from 1950 to 2018. Although uptake began in the early 1990s (Swiss Job Market Monitor), overall diffusion initially remained limited. In 2001, only 5% of advertised positions were offered as AFTs. By 2018, this share had tripled to 15%. In comparison to the widespread adoption of GN language use, AFTs have diffused much more narrowly. This limited spread is consistent with the contranormative nature of AFT

employment schemes: their implementation often requires structural adjustments to workplace arrangements.

4 Analysis

4.1 Data

For our analyses, we combined two independent datasets: the *Swiss Job Market Monitor* and a comprehensive list of managerial functions recorded with the *Swiss Register of Commerce*. The Swiss Job Market Monitor contains a representative sample of job advertisements collected in the German-speaking part of Switzerland since 1950 and nationwide since 2001 (Buchmann et al., 2022). Our analysis focuses on a representative sample of 35 491 advertisements published between 2001 and 2018, for which both industry and regional classifications could be assigned. The second dataset comprises registry records of 522 978 individuals holding managerial and supervisory functions across 739 092 Swiss companies, compiled by market intelligence firm CRIF. As the registry data are only available from 2001 onward and to avoid distortions introduced by the COVID-19 pandemic, we restricted our main analyses to the period 2001 to 2018.

4.2 Constructing a Macro Diffusion Structure of the Swiss Labor Market

Using the registry data, we constructed a dynamic model of the macro-level diffusion structure of the Swiss labor market. First, we decomposed the large, heterogeneous population of Swiss organizations into more homogenous subgroups based on industry sector and geographic region. This grouping is particularly appropriate for labor markets, which are bounded by the mobility radius and skill sets of employees. Moreover, geographic colocation and industry overlap are well-documented predictors of interorganizational diffusion and organizational identification (Baum & Mezias, 1992; Marquis & Tilcsik, 2016; Novoselova, 2022). Accordingly, we aggregated both datasets into six industry sectors based on the European Classification of Economic Activities (NACE) and 184 regional agglomerations defined by the Swiss Federal Bureau of Statistics (BFS, 2019). This procedure yielded 1 104 local industries, each representing an organizational group embedded in a distinct, regionally bounded labor market within the Swiss economy. These groups form the analytical foundation for tracing innovation diffusion across the Swiss economy.

Second, to model the interconnections between these local industries, we constructed an interlock network based on managerial appointments recorded in the Swiss Register of Commerce. Managerial interlocks capture instances in which individuals simultaneously hold managerial positions, typically on boards of directors or as part of executive teams, across multiple organizations. At the aggregated level

of organizational groups, two organizational groups are connected if one or more individuals simultaneously have managerial appointments in firms belonging to both groups. This approach assumes that managerial interlocks, understood as cases where the same person has managerial appointments in multiple firms, are a meaningful proxy for interfirm- and intergroup connectivity (Wellman, 1988).[1] For the diffusion of hiring-related practices, managerial interlock networks are particularly well suited to capturing core–periphery structures, as managerial careers and turnover are highly endogamous in the sense that firms in core groups predominantly recruit from within their own ranks (Bidwell et al., 2014), whereas peripheral organizations often have strong incentives to appoint managers with ties to the core. This dynamic produces an asymmetric configuration in which core groups maintain central positions, while peripheral groups orient themselves toward the core.

For each year from 2001 to 2018, we recorded the number of managerial interlocks connecting firms as of June 30. Over the full period, we identified 9 839 559 interlocks, of which 1 735 097 occurred within the same organizational group and 8 104 462 spanned across different groups, forming between-group interlocks. We interpret the number of interlocks between the same pair of groups as indicator of their relational connectivity. In total, this yielded 201 604 unique intergroup ties of varying strength.

To facilitate interpretation and modeling, we binarized intergroup ties at their median strength each year, thereby establishing a conservative criterion for identifying connectivity between organizational groups: two organizational groups are connected if (and for as long as) they share three or more managerial interlocks. Although this approach forgoes the information contained in varying tie strengths, it mitigates possible deficiencies in the quality of the Register of Commerce data, which is compiled locally and has been aggregated by a third-party provider. The resulting diffusion structure consists of 1 104 organizational subgroups (local labor markets) that are interconnected through interlocking managerial appointments.

4.3 Measurements

We establish the core or periphery status of subgroups based on each group's position in the diffusion structure. Specifically, we classified organizational groups as belonging to either the core or periphery based on their eigenvector centrality in the binarized intergroup network of managerial interlocks. Formally, this network is represented by a directed, binary graph $G(V,E)$ with V vertices representing organizational groups. Let $A_{v,w}$ denote the graph's adjacency matrix, where $A_{v,w} = 1$ if

1 Intergroup managerial interlocks—the simultaneous appointment of managers to firms belonging to two groups—indicate boundary-crossing flows of personnel, information, and resources. Moreover, such appointments reflect the expectation that a person managing one or more firms in one organizational group is well-suited to also manage a firm belonging to the other group at the same time. Thus, the diffusion structure approximates a broad notion of relational connectivity at the group level; one that transcends interpersonal communication.

vertex v is linked to vertex w, and $a_{v,w} = 0$ otherwise. The eigenvector centrality of vertex v is defined as:

$$x_v = \frac{1}{\lambda}\sum_{t \in M(v)} x_t = \frac{1}{\lambda}\sum_{t \in V} A_{v,t} x_t \quad (1)$$

where $M(v)$ is the set of neighbors of v and is the largest eigenvalue of the adjacency matrix. Unlike alternatives such as degree-, closeness- or betweenness centrality, eigenvector centrality identifies nodes that are connected to other highly connected nodes (Bonacich, 1987). As this measure aligns best with our theoretical understanding of status in markets, we rely on eigenvector centrality. For each year, we classified organizational groups with above-median centrality as part of the core, and those with median or below-median scores as part of the periphery.

For each year and organizational group, we calculated the share of advertisements that used GN language and the proportion of advertised positions that offered AFTs. To measure the effect of both innovations on labor markets, we further calculated the forward-lagged share of female managers (in directorates and on supervisory boards) in each organizational group and year.

For each focal organizational group and year, we computed the averaged adoption rate among connected groups located on the opposite side of the core–periphery boundary, while controlling for industry- and region-specific adoption rates in that year. As cross-border adoption indicates the influence exerted by groups across the core-periphery boundary, we refer to it as *boundary pressure:*

$$BP_{i,t} = \frac{1}{n}\sum_{k=1}^{n} a_{i,k,t} \quad (2)$$

Here, $BP_{i,t}$ represents the boundary pressure for a specific focal organizational group i in year t, with $a_{i,k,t}$ the adoption rate of the connected organizational groups on the other side of the core-periphery boundary, and n the number of connected groups. Additionally, we established which focal groups were connected to at least one group on the opposite side of the core–periphery boundary. As this measure reflects the structural potential for cross-boundary diffusion, we refer to it as *boundary weakness* $BW_{i,t}$, with

$$BW_{i,t} = \begin{cases} 1 & \text{if group } i \text{ has one or more connections across the boundary in year } t \\ 0 & \text{otherwise} \end{cases} \quad (3)$$

With the macro-level diffusion structure established, we tracked the adoption rate of each innovation within organizational groups over time. Excluding 313 industry–region combinations without observations, the final sample comprises 791 local industries observed between 2001 and 2018. Table 1 summarizes the combined dataset.

Table 1 Data by Industry Sector

Industry Sector	Networks		Advertisements			Share in Core	Share female*
	Firms	Managers	all	GN	AFTs		
a. production (A,B,C,D,E,F)	130 768	136 576	10 003	6 818	202	67.4%	20.3%
b. trade (G,H)	166 057	143 958	5 350	3 780	286	58.8%	35.9%
c. hospitality (I)	46 357	37 418	1 332	826	92	23.2%	50.2%
d. financial services (J,K)	117 254	188 899	4 058	3 674	254	66.7%	31.8%
e. business services (L,M,N,R,S)	266 546	233 540	5 848	4 963	450	73.7%	40.4%
f. edu., health, soc. services (P,Q)	27 599	39 886	5 290	4 677	1 566	22.7%	68.2%
g. gov., public admin. (O,U)	93	342	2 162	2 059	536	2.3%	41.4%
Total	754 674	780 619	35 491	26 797	3 386	50.0%	

Note: Data for 2001–2018. GN = gender-neutral language use, AFTs = almost-full-time. Industry sectors aggregated from NACE categories A-U. Managers can hold appointments in multiple firms and industries at once.
*) Share of female workers in 2018 (by full-time equivalents).
Sources: Swiss Register of Commerce, SJMM, BfS federal employment statistic.

All models also control for plausible alternative explanations for the uptake of each innovation. For each year and organizational group, we include network density at the industry, region, and group levels. We also control for the prior adoption rate within the industry and region and the total number of intergroup links in each year. At the group level, we account for the number of job advertisements posted annually, the proportion of advertisements targeting experienced and highly qualified applicants, and the number of active firms. All models include year and industry fixed effects. Table A1 (appendix) reports the variables used.

5 Results

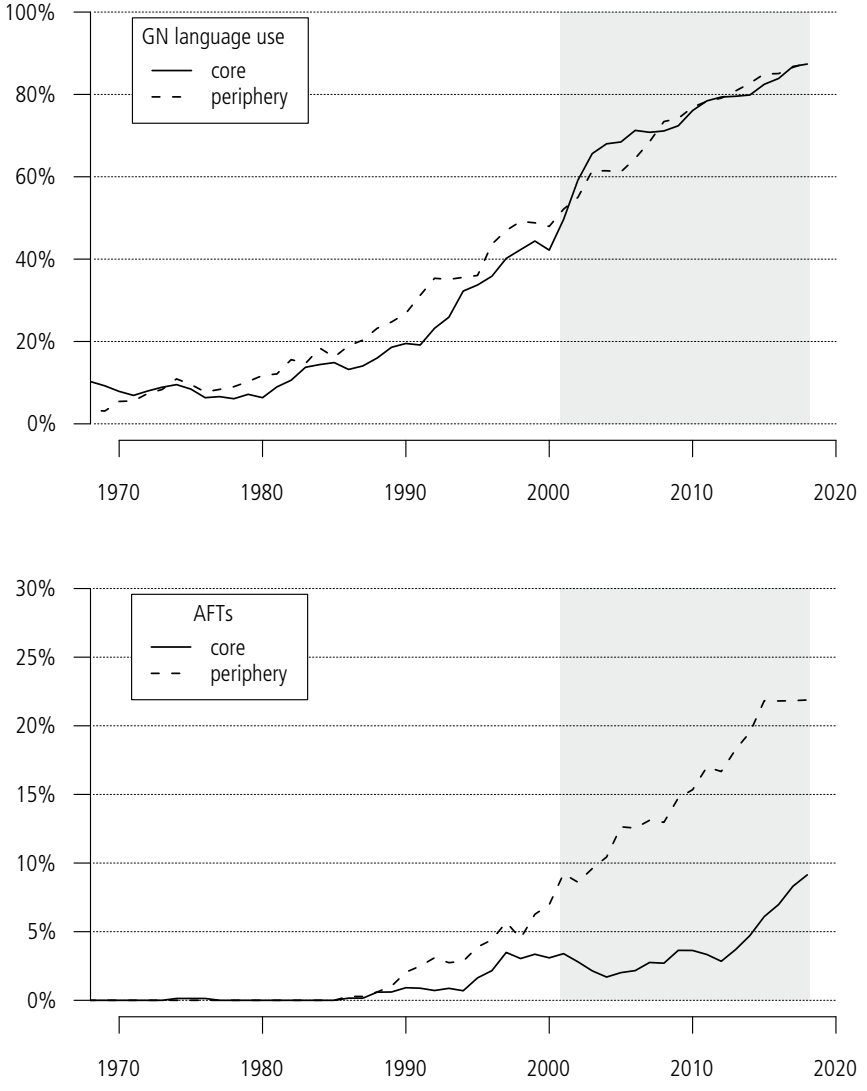
Figure 3 shows the rate of diffusion of both innovations in the core and the periphery of the macro structure. Overall, the symbolic, incremental practice of using GN language was taken up in equal measures in the core and the periphery. By contrast, the contranormative practice of advertising positions in AFTs clearly originated in the periphery, with adoption in the core lagging.

A simple comparison of adoption rates in 2018 confirms that the two innovations diffused along different structural trajectories. For gender-neutral language, adoption rates were nearly identical in core and peripheral groups: a two-proportion z-test with continuity correction revealed no statistically significant differences, χ^2 (1, N = 2 549) = 0.16, p = .69, 95% CI [–0.032, 0.020]. Adoption rates stood at 87.8% (n = 1 352) in the core and 88.4% (n = 1 197) in the periphery. In contrast, for AFT adoption, the same test yielded a highly significant difference, χ^2 (1, N = 2 549) = 60.50, p < .001, 95% CI [–0.142, –0.084]: only 10.3% of positions advertised in core groups (n = 1 352) offered AFTs, compared to 21.6% in peripheral groups (n = 1 197). These results corroborate our theoretical expectation that symbolic innovations such as GN language diffuse widely across core and periphery, whereas contranormative practices like AFTs originate in the periphery and face substantial barriers to widespread adoption.

Multivariate regression analyses allow us to consider the drivers of these observed dynamics in more detail. The main dependent variables are the forward-lagged adoption shares of each practice within each focal organizational group, measured as fractional outcomes. Following Papke & Wooldridge (2008), we use generalized linear models to fit population-averaged panel-data models grouped by organizational group and year. Table A2 (Models M1–M3, appendix), reports results for GN language use; Table A3 (Models M4-M6, appendix) reports results for AFT adoption. Models M1 and M4 include the main effects of boundary pressure and core-periphery status; Models M2–M3 and M5–M6 add interaction terms to assess robustness and potential moderation effects.

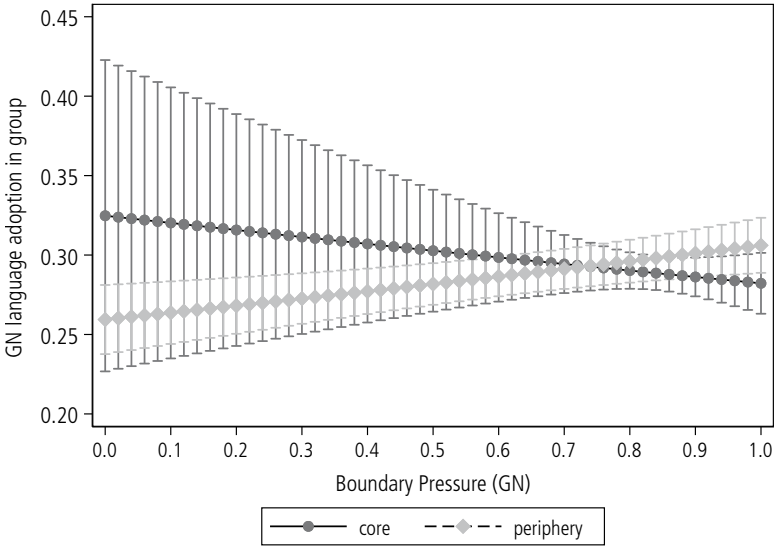
Figure 4 presents the predicted marginal effects for GN language use. The results are consistent with the prediction that GN language use has trickled down from the core of the Swiss economy into the periphery. For core groups, the regression line shows only a modest incline, suggesting that boundary pressure from peripheral groups did not substantially increase adoption in the core. By contrast, the steeper incline of the curve for peripheral groups indicates that boundary pressure from the core did foster moderate subsequent uptake among connected peripheral groups. Even after controlling for alternative drivers of adoption, including within-group dynamics, peripheral groups connected to highly adopting core groups were around seven percentage points more likely to adopt gender-neutral language than peripheral groups connected to non-adopting core groups. Overall, however, the overall high

Figure 3 GN Language Use and AFTs in the Core and Periphery of the Swiss Labor Market



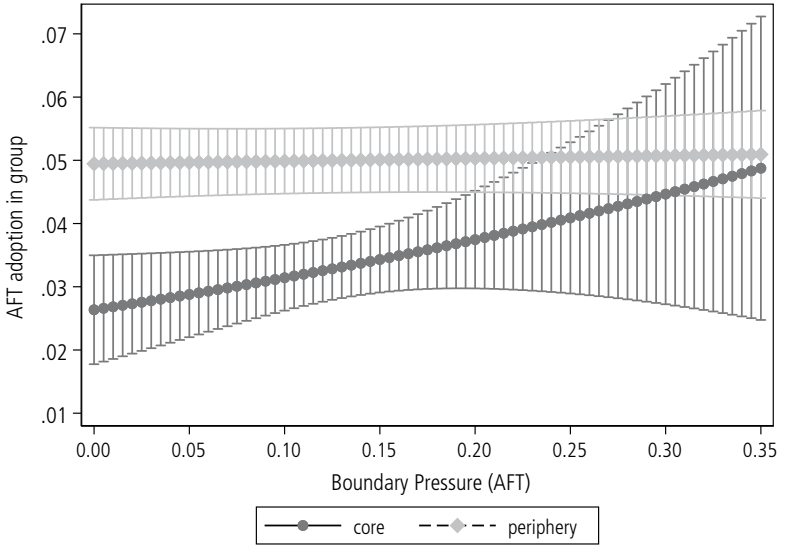
Source: Authors' calculations using SJMM data and core–periphery assignments pre-2001 retropolated for visualization (N = 41012 advertisements by groups that are consistently assigned to either core or periphery throughout 2001–2018; 3-year rolling average). Gray shading identifies period for which data on managerial interlocks is available.

Figure 4 Marginal Effects of Boundary-Crossing Diffusion on GN Language Use



Note: Predicted marginal effects, Table A2, Model M3. 95% confidence intervals.

Figure 5 Marginal Effects of Boundary-Crossing Diffusion of AFTs



Note: Predicted marginal effects, Table A3, Model M6. 95% confidence intervals.

adoption rates of GN language across both core and peripheral groups suggest that intergroup connectivity is not the main driver of diffusion in this case.

Figure 5 presents the predicted marginal effects for AFT adoption. The flat regression line for boundary pressures on peripheral groups indicates that adoption in core groups had no discernible effect on the periphery. In contrast, however, boundary pressure from peripheral groups did significantly increase subsequent adoption rates in the core. This pattern is consistent with the theoretical expectation that AFTs had to diffuse 'upwards' from the periphery into the core. Unlike gender-neutral language, AFTs were not promoted in the wider public discourse by advocacy groups or official guidelines. Without normative backing, their uptake depends less on symbolic legitimacy and more on demonstrating practical viability. Implementing AFT schemes requires reconfiguring work arrangements and managerial responsibilities, changes that are costly and slow unless employers perceive an acute need. Although our data do not allow us to test this directly, peripheral organizations competed to attract and retain highly qualified women by offering more flexible workload options. In this way, AFTs have had to prove their worth in practice before becoming a credible option for adoption in the core. That said, our findings are compatible with the theorized effects of intergroup diffusion. The number of interlocks that reach across the core–periphery boundary significantly increased adoption rates of AFTs in the core. Taken together, these findings underscore that contranormative innovations such as AFTs will spread unevenly: they originate in the periphery, require evidence of effectiveness to overcome structural barriers, and only then diffuse more broadly into the core of the labor market.

Taken together with our initial, descriptive findings, the statistical analyses thus overall support the predicted effects of the core–periphery structure on the diffusion of GN language use and AFTs within the Swiss labor market. We note that these effects obtain after accounting for industry- and regional adoption dynamics and within-group prior adoption: features that are commonly taken as the main drivers of the diffusion of innovations. Furthermore, these findings highlight not only *how* innovations diffuse, but also *where* they gain traction—and where they do not. As a result, the breadth of innovation diffusion comes to the fore: even innovations with high adoption rates may remain concentrated in specific subpopulations, limiting their transformative potential. This invites closer examination of how uneven diffusion may blunt, distort, or reinforce societal effects of the diffusion of innovations.

6 Consequences of Uneven Diffusion in Large, Heterogeneous Populations

Our analysis supports that the incremental, symbolic innovation of GN language use was taken up in the core and subsequently spread widely whereas the radical,

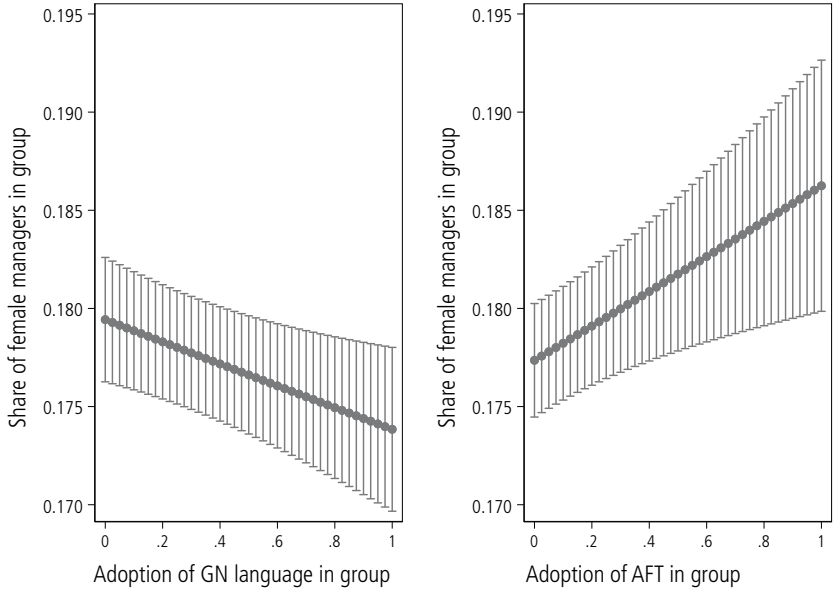
contranormative innovation of offering positions in AFTs originated in the periphery and has spread much more narrowly. This is reflected in the aggregated adoption patterns: As of 2018, 88% of all advertisements in the database used gender-neutral language, and 15% offered almost-full-time employment schemes (n = 2 637). Thus, most but by no means all Swiss firms today use GN language, and some (but not many) offer AFTs. However, these aggregated adoption rates obscure the macro-structural dynamics that we set out to uncover. In large, heterogeneous populations, aggregated adoption measures may mask considerable group-level variation.

These observed divergences in adoption rates suggest that innovations diffuse unevenly across sectors. If adoption remains concentrated in sectors that are already relatively accommodating, while lagging in sectors where structural barriers are greater, assessments of their overall impact should consider the social dynamics created by uneven diffusion processes. To the extent that the adoption of either GN language or AFTs creates more attractive working environments for female employees, divergent adoption rates between sectors may prompt crowding-out effects: highly qualified female workers may increasingly concentrate in sectors with more accommodating conditions, thereby further reinforcing sectoral inequalities in gendered labor market outcomes.

Such scenarios raise pressing questions about whether the diffusion of organizational practices can achieve widespread structural change across heterogeneous labor markets and how the diffusion of either innovation affects female labor market participation more broadly. To assess the possible impact of uneven diffusion, we therefore undertook a follow-up analysis by correlating the change in adoption rates of each innovation within a local industry with the forward-lagged proportion of female managers within the 19-year period of our investigation. Table A4 (appendix) presents regression output predicting the forward-lagged effect of the proportion of female managers with high-level appointments in each focal organizational group. As before, we use generalized linear models to fit population-averaged panel-data models grouped by the focal organizational group and year. We control for the overall proportion of female managers in each year and include year and industry dummies.

Figure 6 shows an approximation of the effectiveness of both innovations. While these associations should not be interpreted causally, as they may be shaped by unobserved confounders, the observed patterns do align with our theoretical expectations. Despite rapid and widespread diffusion, the widespread use of gender-neutral (GN) language does not appear to have had a discernible positive impact on the share of female managers. This finding is consistent with the notion that symbolic innovations, particularly those adopted through top-down processes, are often driven by legitimacy concerns (Meyer & Rowan, 1977). In contrast, the adoption of almost-full-time (AFT) employment schemes is positively associated with subsequent increases in female representation in managerial roles. Although

Figure 6 Lagged Effect of GN Language Use in Advertisements and Offers of AFTs on the Proportion of Female Executives by Local Industry



Note: Predicted marginal effects of Table 5. 95% confidence intervals.

AFTs have diffused more slowly and unevenly, local industries that exhibit higher uptake tend to experience modest but measurable gains in the proportion of female managers. Again, we caution that this relation is correlational, and the magnitude of the effect is small. Nevertheless, the positive effect of AFTs on female representation in managerial positions is consistent with our reasoning that innovations that originate at the periphery must prove their effectiveness before they are adopted in the core.

7 Discussion

We have proposed that large, heterogeneous populations of potential adopters cluster into smaller, more homogenous groups characterized by restricted inter-group exchange. These groups form a status-differentiated diffusion structure through which innovations must spread to achieve broad adoption. Our account emphasizes the radicalness of innovations and core–periphery differentials as key predictors of diffusion outcomes. Consistent with our framework, we have found that the in-

cremental, symbolic innovation of gender-neutral language has spread rapidly and widely, whereas the radical, contranormative innovation of advertising vacancies with almost-full-time employment schemes has remained confined to narrow niches of industries and regions. More generally, incremental, symbolic innovations tend to transfer readily from core groups to the periphery in self-reinforcing trickle-down processes, while radical, contranormative innovations must prove their viability to trickle up from the periphery to the core.

These findings carry broader implications for understanding innovation diffusion in large, heterogeneous populations. They suggest that group-level variation in adoption reflects not only differences in local preferences and resources, but is also a consequence of macro-level features of the diffusion structure. As groups differ in intergroup connectivity and status, some are structurally positioned to embrace innovations, while others face persistent barriers to adoption. Even innovations that offer clear benefits may struggle to achieve widespread uptake if they are contranormative and originate in the periphery. Diffusion should therefore be understood as the joint outcome of within-group dynamics and between-group structures of exchange, status, and influence.

Critically, our framework and findings underscore that innovations diffuse unevenly in large, heterogeneous populations. This unevenness raises important questions about the capacity of innovations to effect broad, systemic change. When adoption remains confined to sectors or groups already predisposed to reform, the transformative potential of organizational innovations may be blunted, and existing inequalities may inadvertently be reinforced. Diffusion models that assume homogeneous populations or neglect macro-structural segmentation risk underestimating the barriers to widespread adoption and the complexities of achieving broad societal change. More fundamentally, uneven diffusion can produce unintended and potentially adverse consequences. Concentrated adoption within specific subgroups may trigger crowding-out effects, ultimately exacerbating disparities rather than ameliorating them.

From a practical perspective, our findings underscore the importance of fostering intergroup connectivity and targeting core groups when aiming to promote the widespread diffusion of innovations in large, heterogeneous populations. Efforts confined to isolated sectors, regions, or organizational types are unlikely to achieve transformative societal impact. Instead, policymakers, change agents, and advocates should prioritize strategies that bridge across group boundaries, amplify adoption among high-status groups, and facilitate the trickle-down or trickle-up processes necessary for widespread diffusion. A consideration of the macro-level diffusion structure may help identify effective levers to this end, such as increasing relational connectivity between groups, precipitating shifts in normative expectations, or even redefining intergroup boundaries by modifying interaction patterns. Particularly for contranormative innovations, initiatives that enhance the visibility

and legitimacy of early adopters in the periphery may prove crucial for overcoming diffusion barriers.

This study has several limitations and opens avenues for future research aimed at advancing the macro-level perspective presented here. We highlight four in particular. First, different types of innovations could be elaborated along additional dimensions and cases. In this study, we distinguished innovations based on normative connotations (whether symbolic or contranormative) and associated costs of implementation, considering two hiring-related organizational practices. Future research could refine and expand this typology across different domains of innovation and across different populations of potential adopters. Second, the decomposition of large populations into subgroups and the assessment of group-level interconnectedness are tied to the chosen measurement instruments. The operationalization of the macro-level diffusion structure presented here relies on a single proxy for intergroup connectivity: managerial interlocks. While these do offer a valuable lens for capturing boundary-spanning relationships across organizational groups, alternative relational indicators, such as mutual attendance at meetings and conferences, participation in public events, or connections mediated through digital platforms, could yield complementary insights into the macro-level diffusion structure of large, heterogeneous populations. Third, although our analysis draws on 35 491 job advertisements, this number represents the lower bound of what can be meaningfully analyzed when set against the diffusion structure of the entire Swiss labor market, as operationalized by 791 local industries. The moderate empirical effects we report are best understood as reflecting limitations in modeling opportunities and data availability rather than the absence of underlying dynamics. At the same time, the consistency of our results across multiple specifications suggests that the reported findings are robust. Future improvements in the scope and granularity of regionalized datasets should enable more fine-grained analyses that capture diffusion dynamics with greater precision. On a related note, owing to our design, we can only offer indirect evidence that intergroup connectivity shapes innovation diffusion. Future research could complement this approach with meso- and micro-level analyses, both quantitative and qualitative, examining specific mechanisms through which innovations traverse group boundaries—be it through informational events, industry publications, or by word-of-mouth.

More broadly, we hope that this study invites a renewed focus on the macro-structural foundations of diffusion processes in large, heterogeneous populations. While we have treated group boundaries as analytically given, in practice, the boundaries between organizational groups are in practice subject to negotiation, contestation, and change over time. Future research could extend this approach by examining how emerging innovations not just traverse but also reshape group boundaries, and how evolving status hierarchies and normative frameworks interact with diffusion dynamics. Advancing this agenda will require both qualitative and quantitative research

as well as further conceptual work that engages explicitly with the complexities of diffusion across segmented populations. As societal change often depends on the widespread diffusion of novel practices, ideas, and technologies, understanding how innovations cross (and in so doing possibly transform) group boundaries remains a central and open task for future research on innovation diffusion.

8 References

Abernathy, W. J., & Utterback, J. M. (1978). Patterns of industrial innovation. *Technology Review, 80*(7), 40–47.

Abrahamson, E., & Rosenkopf, L. (1993). Institutional and competitive bandwagons: Using mathematical modeling as a tool to explore innovation diffusion. *The Academy of Management Review (AMR), 18*(3), 487–517.

Abrahamson, E., & Rosenkopf, L. (1997). Social network effects on the extent of innovation diffusion: A computer simulation. *Organization Science, 8*(3), 289–309.

Agneessens, F., Trincado-Munoz, F. J., & Koskinen, J. (2024). Network formation in organizational settings: Exploring the importance of local social processes and team-level contextual variables in small groups using bayesian hierarchical ERGMs. *Social Networks, 77*(February 2021), 104–117. https://doi.org/10.1016/j.socnet.2022.07.001

Banerjee, A., Chandrasekhar, A. G., Duflo, E., & Jackson, M. O. (2013, Jul 25). The diffusion of microfinance. *Science, 341*(6144), 1236498–1236498. https://doi.org/10.1126/science.1236498

Baum, J. A., & Mezias, S. J. (1992). Localized competition and organizational failure in the Manhattan hotel industry, 1898–1990. *Administrative Science Quarterly*, 580–604.

Becker, M. H. (1970). Sociometric location and innovativeness: Reformulation and extension of the diffusion model. *American Sociological Review*, 267–282.

Beham, B., Baierl, A., & Eckner, J. (2020). When does part-time employment allow managers with family responsibilities to stay on the career track? A vignette study among German managers. *European Management Journal, 38*(4), 580–590.

Berger, J., Ridgeway, C., & Zelditch, M. (2002). Construction of status and referential structures. *Sociological Theory, 20*(2), 157–179.

BFS. (2018). *Bildungsstand der Bevölkerung nach Geschlecht und Altersgruppen*. https://www.bfs.admin.ch/bfs/en/home/statistics/economic-social-situation-population/gender-equality/education/educational-attainment.html

BFS. (2019). *Erläuterungsbericht zu den Arbeitsmarktregionen*.

Bidwell, M., Won, S., Barbulescu, R., & Mollick, E. (2014, May). I used to work at Goldman Sachs! How firms benefit from organizational status in the market for human capital. *Strategic Management Journal, 36*(8), 1164–1173. http://doi.wiley.com/10.1002/smj.2272

Bikhchandani, S., Hirshleifer, D., & Welch, I. (1992). A theory of fads, fashion, custom, and cultural change as informational cascades. *Journal of Political Economy, 100*(5), 992–1026.

Blader, S. L., & Chen, Y.-R. (2011). What influences how higher-status people respond to lower-status others? Effects of procedural fairness, outcome favorability, and concerns about status. *Organization Science, 22*(4), 1040–1060.

Bohnet, I. (2016). *What works: Gender equality by design*. Belknap Press.

Bohnsack, R., Kolk, A., Pinkse, J., & Bidmon, C. M. (2020). Driving the electric bandwagon: The dynamics of incumbents' sustainable innovation. *Business Strategy And The Environment, 29*(2), 727–743.

Bonacich, P. (1987). Power and centrality: A family of measures. *American Journal of Sociology, 92*(5), 1170–1182.

Bothner, M. S., Godart, F., Askin, N., & Lee, W. (2022). What is social status and how does it impact the generation of novel ideas? In G. Cattani, D. Deichmann, & S. Ferriani (Eds.), *The generation, recognition and legitimation of novelty* (Vol. 77, pp. 111–136). Emerald Publishing Limited.

Buchmann, M., Buchs, H., Busch, F., Clematide, S., Gnehm, A.-S., & Müller, J. (2022). Swiss Job Market Monitor: A rich source of demand-side micro data of the labour market. *European Sociological Review, 38*(6), 1001–1014.

Burt, R. (1987). Social contagion and innovation: Cohesion versus structural equivalence. *American Journal of Sociology, 92*(6), 1287–1335.

Burt, R. (1988). The stability of American markets. *American Journal of Sociology*, 356–395.

Cattani, G., & Ferriani, S. (2008). A core/periphery perspective on individual creative performance: Social networks and cinematic achievements in the Hollywood film industry. *Organization Science, 19*(6), 824–844.

Centola, D. (2018). *How behavior spreads: The science of complex contagions*. Princeton University Press.

Coleman, J., Katz, E., & Menzel, H. (1957). The diffusion of an innovation among physicians. *Sociometry, 20*(4), 253–270.

Coleman, J., Katz, E., & Menzel, H. (1966). *Medical innovation: A diffusion study*. Bobbs-Merrill Co.

Deephouse, D. L., & Suchman, M. (2008). Legitimacy in organizational institutionalism. *The Sage handbook of organizational institutionalism, 49*, 77.

Doehne, M. (2024). Quality competition on markets: a socio-economic account. *Socio-Economic Review, 22*(4), 1605–1635.

Doehne, M., McFarland, D., & Moody, J. (2024a). Network ecology: Introduction to the Special Issue. *Social Networks, 77*, 1–4.

Doehne, M., McFarland, D., & Moody, J. (2024b). Network ecology: Tie fitness in social context(s). *Social Networks, 77*, 180–196. https://doi.org/10.1016/j.socnet.2023.11.002

Doehne, M., & Rost, K. (2021). Long waves in the geography of innovation: The rise and decline of regional clusters of creativity over time. *Research Policy*.

Dutu, R. (2014). *Women's role in the Swiss economy* (1144). OECD.

Festinger, L., Schachter, S., & Back, K. (1950). *Social pressures in informal groups; a study of human factors in housing*. Harper.

Fligstein, N. (1985). The spread of the multidivisional form among large firms, 1919–1979. *American Sociological Review, 50*(3), 377–391.

Godart, F. C., Shipilov, A. V., & Claes, K. (2014, Apr). Making the most of the revolving door: The impact of outward personnel mobility networks on organizational creativity. *Organization Science, 25*(2), 377–400. https://doi.org/10.1287/orsc.2013.0839

Gould, R. V. (2002). The origins of status hierarchies: A formal theory and empirical test. *American Journal of Sociology [AJS], 107*(5), 1143–1178.

Granovetter, M. (1978). Threshold models of collective behavior. *American Journal of Sociology, 83*(6), 1420–1443.

Herring, C. (2009). Does diversity pay?: Race, gender, and the business case for diversity. *American Sociological Review, 74*(2), 208–224.

Kalev, A., Dobbin, F., & Kelly, E. (2006, Aug). Best practices or best guesses? Assessing the efficacy of corporate affirmative action and diversity policies [Review]. *American Sociological Review, 71*(4), 589–617. <Go to ISI>://WOS:000240608600004

Katz, E., & Lazarsfeld, P. F. (1955). *Personal influence: The part played by people in the flow of mass communications*. Free Press.

Keller, E. (2015). Viel erreicht – neu herausgefordert. 40 Jahre Eidgenössische Kommission für Frauenfragen EKF. *Frauenfragen*, 8–18.

Krone-Germann, I. (2011). *Part-time employment in Switzerland: Relevance, impact and challenges*. Peter Lang.

Lin, N. (1999). Social networks and status attainment. *Annual Review of Sociology, 25*(1), 467–487.

Macy, M. W. (1991). Chains of cooperation: Threshold effects in collective action. *American Sociological Review*, 730–747.

Malter, D. (2014). On the causality and cause of returns to organizational status: Evidence from the Grands Crus Classés of the Médoc. *Administrative Science Quarterly, 59*(2), 271–300.

Mansfield, E. (1961). Technical change and the rate of imitation. *Econometrica, 29*(4), 741–766. http://www.jstor.org/stable/1911817

Marquis, C., & Tilcsik, A. (2016). Institutional equivalence: How industry and community peers influence corporate philanthropy. *Organization Science, 27*(5), 1325–1341.

Menzel, H. (1960). Innovation, integration, and marginality: a survey of physicians. *American Sociological Review*, 704–713.

Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology, 83*(2), 340–363.

Naumovska, I., Gaba, V., & Greve, H. (2021). The diffusion of differences: A review and reorientation of 20 years of diffusion research. *Academy of Management Annals, 15*(2), 377–405.

Novoselova, O. A. (2022). What matters for interorganizational connectedness? Locating the drivers of multiplex corporate networks. *Strategic Management Journal, 43*(4), 872–899.

OECD. (2019). *Education at a Glance Database,* http://stats.oecd.org. https://doi.org/10.1787/f8d7880d-en

Papke, L. E., & Wooldridge, J. M. (2008). Panel data methods for fractional response variables with an application to test pass rates. *Journal of Econometrics, 145*(1–2), 121–133.

Pasamar, S., & Alegre, J. (2015). Adoption and use of work-life initiatives: Looking at the influence of institutional pressures and gender. *European Management Journal, 33*(3), 214–224.

Perry-Smith, J. E., & Mannucci, P. V. (2017). From creativity to innovation: The social network drivers of the four phases of the idea journey. *Academy of Management Review, 42*(1), 53–79.

Podolny, J. M. (2005). *Status signals: A sociological study of market competition*. Princeton University Press.

Rao, H., Greve, H. R., & Davis, G. F. (2001). Fool's gold: Social proof in the initiation and abandonment of coverage by Wall Street analysts. *Administrative Science Quarterly, 46*(3), 502–526.

Rogers, E. (2010 [1963]). *Diffusion of innovations* (5th ed. ed.). Free Press.

Roth, P., & Doehne, M. (2024). Cohesion is lower in virtualized collaborations: A comparison of teams' network structure. *Small Group Research, 55*(4), 560–594.

Ryan, B., & Gross, N. C. (1943). The diffusion of hybrid seed corn in two Iowa communities. *Rural Sociology, 8*(1), 15–24.

Sauder, M., Lynn, F., & Podolny, J. (2012). Status: Insights from organizational sociology. *Annual Review of Sociology, 38*(1), 267–283. 10.1146/annurev-soc-071811-145503

Schoen, C., & Rost, K. (2021). What really works?! Evaluating the effectiveness of practices to increase the managerial diversity of women and minorities. *European Management Journal, 39*(1), 95–108.

Secchi, D., & Gullekson, N. L. (2016). Individual and organizational conditions for the emergence and evolution of bandwagons. *Computational and Mathematical Organization Theory, 22*(1), 88–133.

Sgourev, S. V. (2013). How Paris gave rise to Cubism (and Picasso): Ambiguity and fragmentation in radical innovation. *Organization Science, 24*(6), 1601–1617.

Strang, D., & Meyer, J. W. (1993). Institutional conditions for diffusion. *Theory and Society, 22*(4), 487–511.

Tolbert, P. S., & Zucker, L. G. (1983). Institutional sources of change in the formal structure of organizations: The diffusion of civil service reform, 1880–1935. *Administrative Science Quarterly*, 22–39.

Tushman, M. L., & Anderson, P. (2018). Technological discontinuities and organizational environments. In G. Hage (Ed.), *Organizational innovation* (pp. 345–372). Routledge.

Uzzi, B., & Lancaster, R. (2004). Embeddedness and price formation in the corporate law market. *American Sociological Review, 69*(3), 319–344.

Vaaler, P. M., & McNamara, G. (2004). Crisis and competition in expert organizational decision making: Credit-rating agencies and their response to turbulence in emerging economies. *Organization Science, 15*(6), 687–703.

Valente, T. (1996, 1996). Social network thresholds in the diffusion of innovations. *Social Networks, 18*(1), 69–89.

Valente, T., & Vega Yon, G. (2020). Diffusion/contagion processes on social networks. *Health Education & Behavior, 47*(2), 235–248.

Washington, M., & Zajac, E. J. (2005). Status evolution and competition: Theory and evidence. *Academy of Management Journal, 48*(2), 282–296.

Wejnert, B. (2002). Integrating models of diffusion of innovations: A conceptual framework. *Annual Review of Sociology, 28*(1), 297–326.

Wellman, B. (1988). Structural analysis: From method and metaphor to theory and substance. In B. Wellman & S. D. Berkowitz (Eds.), *Social structures: a network approach* (pp. 19–61). Cambridge University Press.

White, H. (2002). *Markets from networks: Socioeconomic models of production*. Princeton University Press.

World Economic Forum. (2024). *Global Gender Gap Report 2024* (1944835121).

Young, H. P. (2009). Innovation diffusion in heterogeneous populations: Contagion, social influence, and social learning. *The American Economic Review, 99*(5), 1899–1924. https://doi.org/10.1257/aer.99.5.1899

Appendix

Table A1 Descriptive Statistics

Variable Name	Mean	SD	Min	Med.	Max
Adoption share of GN in focal OG	0.28	0.422	0	0	1
Adoption share of AFTs in focal OG	0.04	0.151	0	0	1
Share of female top/middle managers in focal OG	0.17	.121	0	.154	1
Core-periphery status of OG (1 = Core, 2 = Periphery)	1.52	0.499	1	2	2
Boundary pressure GN	0.53	0.382	0	.72	1
Boundary pressure AFTs	0.05	0.089	0	.03	1
Boundary weakness	0.25	0.435	0	0	1
Number of links to other OGs (ln)	2.31	1.748	0	2.49	6.90
Adoption rate region GN	0.32	0.407	0	0	1
Adoption rate industry GN	0.48	0.400	0	.63	1
Adoption rate region AFTs	0.03	0.104	0	0	1
Adoption rate industry AFTs	0.04	0.080	0	.01	1
Number of advertisements focal OG (ln)	0.55	0.873	0	0	5.48
Network density focal OG	0.01	0.054	0	.00	2.5
Number of active firms focal OG (ln)	4.44	1.890	0	4.58	10.77
Year	2009.50	5.188	2001	2009.5	2018

Note: GN = gender-neutral advertisements, AFTs = almost-full-time employment schemes, OG = organizational group. N = 14 238 observations.
Source: Authors' database and calculations.

Table A2 GN Language Use Conditional on Core–Periphery Status of Organizational Group

Forward-lagged adoption share of GN in OG	M1	M2	M3
Adoption share of GN language use in OG	0.849***	0.846***	0.848***
	(0.037)	(0.037)	(0.037)
Adoption rate industry GN	0.023	0.021	0.025
	(0.034)	(0.035)	(0.035)
Adoption rate region GN	0.114***	0.113***	0.116***
	(0.026)	(0.026)	(0.026)
Network density OG	0.033	0.031	0.026
	(0.178)	(0.177)	(0.176)
Number of links to other OGs (ln)	0.028*	0.029*	0.033**
	(0.016)	(0.017)	(0.017)
Number of active firms in OG (ln)	0.038***	0.038***	0.038***
	(0.013)	(0.013)	(0.013)
Trade (Ref: production)	−0.060***	−0.060***	−0.061***
	(0.023)	(0.023)	(0.023)
Hospitality (Ref: production)	−0.101***	−0.102***	−0.099***
	(0.034)	(0.034)	(0.034)
Financial services (Ref: production)	−0.003	−0.003	−0.008
	(0.026)	(0.026)	(0.026)
Business services (Ref: production)	−0.054**	−0.054**	−0.056**
	(0.024)	(0.024)	(0.024)
Government, public admin (Ref: production)	0.623***	0.618***	0.609***
	(0.046)	(0.047)	(0.047)
Education, health, social serv. (Ref: production)	0.197***	0.196***	0.200***
	(0.022)	(0.023)	(0.023)
Number of advertisements in OG (ln)	0.101***	0.101***	0.097***
	(0.010)	(0.010)	(0.010)
Zero ads in OG and year (no = 0 / yes = 1)	−0.915***	−0.919***	−0.925***
	(0.053)	(0.053)	(0.053)

Continuation of Table A2 on the next page.

Continuation of Table A2.

Forward-lagged adoption share of GN in OG	M1	M2	M3
OG is in Periphery (Ref: Core)	0.048*	0.107	0.200
	(0.025)	(0.103)	(0.131)
Boundary pressure GN	0.100***	0.170	0.239
	(0.034)	(0.121)	(0.163)
Periphery # Boundary pressure GN		0.000	0.000
		(0.000)	(0.000)
Boundary weakness # Boundary pressure GN		−0.073	−0.166
		(0.122)	(0.167)
Boundary weakness	0.047***	0.043**	0.372*
	(0.015)	(0.017)	(0.195)
Periphery # Boundary weakness			−0.424**
			(0.201)
Boundary weakness # Boundary pressure GN			−0.379
			(0.241)
Periphery # Boundary weakness # Boundary pressure GN			0.472*
			(0.250)
Constant	−1.951***	−1.955***	−2.028***
	(0.067)	(0.101)	(0.130)
Observations	13 447	13 447	13 447
Number of OG	791	791	791
Year Dummies	17	17	17
Wald chi2 (df)	5 301	5 303	5 306
Prob > chi2	0.0000	0.0000	0.0000

Note: GN = gender-neutral advertisements, OG = organizational group. ***p < 0.01, **p < 0.05, *p < 0.1.
Source: Authors' database and calculations.

Table A3 Diffusion of AFTs Conditional on Core–Periphery Status of Organizational Group

Variables	M4	M5	M6
Adoption share AFTs in focal OG	0.371***	0.404***	0.385***
	(0.072)	(0.071)	(0.072)
Adoption rate industry AFTs	0.580***	0.570***	0.543***
	(0.168)	(0.170)	(0.171)
Adoption rate region AFTs	0.052	−0.007	−0.028
	(0.212)	(0.219)	(0.223)
Network density focal OG	0.065	0.061	0.070
	(0.282)	(0.276)	(0.282)
Number of links to other OGs (ln)	0.008	0.016	0.013
	(0.046)	(0.046)	(0.046)
Number of active firms focal OG (ln)	0.131***	0.127***	0.127***
	(0.044)	(0.043)	(0.043)
Trade (Ref: production)	0.758***	0.737***	0.712***
	(0.274)	(0.272)	(0.275)
Hospitality (Ref: production)	0.820***	0.774***	0.771***
	(0.296)	(0.295)	(0.296)
Financial services (Ref: production)	0.919***	0.908***	0.903***
	(0.280)	(0.278)	(0.280)
Business services (Ref: production)	0.901***	0.883***	0.878***
	(0.267)	(0.265)	(0.267)
Government, public admin (Ref: production)	2.812***	2.724***	2.750***
	(0.283)	(0.282)	(0.283)
Education, health, social serv. (Ref: production)	2.371***	2.308***	2.309***
	(0.252)	(0.251)	(0.252)
Number of advertisements focal OG (ln)	0.200***	0.206***	0.216***
	(0.030)	(0.030)	(0.031)
Zero ads in local industry and year (no = 0 / yes = 1)	−0.460***	−0.472***	−0.447***
	(0.077)	(0.077)	(0.078)

Continuation of Table A3 on the next page.

Continuation of Table A3.

Variables	M4	M5	M6
Periphery (Ref: Core)	0.336***	0.578***	0.554***
	(0.078)	(0.114)	(0.118)
Boundary pressure AFTs	0.281*	2.245***	3.236***
	(0.155)	(0.636)	(0.674)
Periphery # Boundary pressure AFT		−2.019***	−2.880***
		(0.644)	(0.715)
Boundary weakness # Boundary pressure AFTs			−1.479
			(1.264)
Boundary weakness	0.173***	0.124**	0.170
	(0.049)	(0.051)	(0.171)
Periphery # Boundary weakness			0.075
			(0.184)
Periphery # Boundary weakness # Boundary pressure AFT			1.208
			(1.302)
Constant	−5.914***	−5.739***	−5.763***
	(0.324)	(0.296)	(0.299)
Observations	13 447	13 447	13 447
Number of OG	791	791	791
Year Dummies	17	17	17
Wald chi2 (df)	1 466	1 489	1 472
Prob > chi2	< .0001	< .0001	< .0001

Note: AFTs = almost-full-time, OG = organizational group. ***p < 0.01, **p < 0.05, *p < 0.1.
Source: Authors' database and calculations.

Table A4 Approximation of the Effectiveness of Both HR-Innovations

	(1)
Forward-lagged proportion of female managers in focal OG	Model 1
Proportion of female managers focal OG	2.160***
	(0.024)
Share of positions advertised in GN language in focal OG	−0.029**
	(0.013)
Share of positions offering AFTs in focal OG	0.050***
	(0.016)
Periphery (Ref: Core)	0.126***
	(0.023)
Boundary pressure GN	0.009
	(0.011)
Boundary pressure AFTs	0.032
	(0.028)
Boundary weakness	−0.018***
	(0.006)
Number of links to other OGs (ln)	−0.065***
	(0.006)
Number of advertisements in focal OG (ln)	−0.009
	(0.008)
Network density focal OG	−0.002
	(0.017)
Number of active firms focal OG (ln)	0.100***
	(0.008)
Trade (Ref: production)	0.221***
	(0.030)
Hospitality (Ref: production)	0.242***
	(0.030)

Continuation of Table A4 on the next page.

Continuation of Table A4.

	(1)
Forward-lagged proportion of female managers in focal OG	Model 1
Financial services (Ref: production)	−0.073
	(0.045)
Business services (Ref: production)	0.164***
	(0.031)
Government, public admin (Ref: production)	0.161***
	(0.042)
Education, health, social serv. (Ref: production)	0.325***
	(0.029)
No advertisements in focal OG (dummy variable)	−0.026*
	(0.014)
Constant	−2.815***
	(0.044)
Observations	13 440
Organizational Groups	791
Years	18
Wald chi2 (df)	16 410
Prob > chi2	< .0001

Note: GN = gender-neutral advertisements, AFTs = almost-full-time, OG = organizational group. ***p < 0.01, **p < 0.05, *p < 0.1.
Source: Authors' database and calculations.