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Career Networks in Shock: An Agenda for in-COVID/Post-COVID Career-Related Social Capital

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Abstract: The COVID-19 pandemic was a career shock for many, including early and mid-career researchers. Due to the (digital) transformation it has caused in the social domain, it may have lastingly changed the rules for career development. In this conceptual paper, we investigate how the changed social environment created gaps in our understanding of academic career development and the role social capital plays in it. Our narrative review of the literature arrives at three major gaps: two are related to the nature, antecedents, and outcomes of (career-related) social capital, and one is related to the methodological backdrop of how knowledge is being generated in this domain. Based on the identified gaps, we specify avenues for further (and much needed) research.

Keywords: academic careers; career development; COVID-19; digital networks; digital transformation; social capital; social resources



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1. Introduction

The beginnings of the COVID-19 pandemic (now only referred to as “COVID”) transformed human social behavior and the availability of social resources. Recent research has especially focused on individuals’ resource losses in various forms; for example, financial losses, increased workloads due to necessary workflow adaptations, psychological and physiological health issues with oneself, health issues and death among family and friends, caretaking responsibilities due to locked-down kindergartens or schools [1], social isolation, etc. Social aspects are especially highlighted, as the major means of communication and social support and the access to these resources have changed tremendously within days or weeks.

While a plethora of research about social capital exists [2], it is highly questionable in how far this pre-COVID research can inform an in-COVID or post-COVID world. Given the massive social changes outlined above, a direct generalization seems impossible; the very nature of social capital, its antecedents, and its outcomes may have been altered considerably. While COVID may have transformed the social landscape significantly, there is no reason to believe that it did diminish the overall importance of social contact—which makes this knowledge gap especially worrisome. Social capital interventions have also been proposed to fend of the pandemic in the first place [3].

In this conceptual paper, we call for the exploration of the new nature of social capital and revisit concepts and theories of social capital for their applicability in an in-COVID and post-COVID world. In order to break down this enormous task and to enhance clarity, we will further contextualize this research problem. Specifically, we will use early and mid-career researchers as an example for the rest of this paper. This is an interesting population, as careers of researchers have been affected quite directly by COVID through travel restrictions and social distancing standards, impaired opportunities for field work (and subsequently delayed or cancelled research projects), cancelled academic conferences that represented venues for academic social exchange, learning, and socialization [4]. Collaboration even among immediate colleagues has been hampered [5], while at the same

time opportunities opened up for collaborations irrespective of geographical considerations. Fry et al. [6] studied international collaboration patterns in early COVID-research and indeed found a change in the pattern of research teams: they became smaller and international collaboration (between more elite institutions) was intensified. At the same time, the precariousness and uncertainty often associated with the positions of early and mid-career researchers [7–10] is of interest, as “individuals [. . .] who lack resources are more vulnerable to resource loss and less capable of resource gain” [11]. This is echoed by current research that has shown that COVID tends to exacerbate the situation for people already in precarious work situations, making them even more vulnerable (e.g., [12–14]). The pandemic had unequal effects depending on, for example, researchers’ field of study [15], their gender [16–19], parenthood [20–22], or their mental and physical health status [23]. Importantly, these consequences may be long-lasting, as Gao et al. [24] concluded based on the observation that the number of new research projects has decreased (and stayed low thus far).

While it remains to be seen how the negative and positive changes associated with COVID balance out in the grand scheme of things, first evidence predominantly adopts rather negative views. In general, COVID seems to have exacerbated the uncertainty and precariousness associated with early and mid-career academic positions [25], as the number of academic positions and funding opportunities decreased (e.g., [26,27]). From that perspective, COVID is a major, negative career shock for academics that hits those hardest that are just starting out on their academic careers [28].

The question that arises here is how academic careers can be successfully managed, despite these changes and the current state of uncertainty. This question is of relevance not only to individual researchers, but also for society, as it puts future academic leadership at risk (which is even more problematic in so far that COVID-related research has also shown that policy has become more strongly linked to scientific knowledge creation during COVID [29]). To answer this question, we first need to better understand academics’ social resources and how they are being appropriated and used by individual academics. Importantly, we also need to understand how these resources may have been altered by COVID and its consequences. Given the tremendous impact of COVID on our social lives, we anticipate that the nature of social resources and the channels through which to access and use these resources will change. Therefore, in this section, we review the pre-COVID literature about social capital, social learning behaviors, academic career outcomes, career shocks, and the methodological perspective necessary to study these phenomena.

In the following, we will outline three major gaps in our current understanding based on a narrative literature review and use these gaps as a basis for developing avenues for further research about in-COVID and likely post-COVID career-related social resources. Specifically, we will argue that we insufficiently understand social capital and its antecedents in an in-COVID and post-COVID world (Gap 1), social capital’s consequences for career outcomes (Gap 2), and what methods could be applied to appropriately understand these complex relationships (Gap 3). Before we deal with these gaps, however, we introduce the general theoretical backdrop of our thinking.

2. Gaps in Our Understanding of in-COVID and Post-COVID Social Capital

Before reviewing the associated literature in more detail, we start from the perspective of career development to supply a frame for the later discussion of the gaps and the proposed research agenda. The debate about social capital can then be seen in the light of past work on career development and we will explicate the gaps found in this body of research that currently limit our understanding of the phenomena being addressed.

To understand the implications of COVID more thoroughly through the lens of an established career development theory, we turn to Hobfoll’s [30] conservation of resources theory. This theory was originally developed as a theory of stress, but it also became one of the most often used theories within career development [31]. In the context of this paper, the lenses of stress and careers are equally interesting: stress in the form of

COVID-induced loss of resources is a point of departure, attaining career goals is our focal outcome. The idea of conservation of resources theory is that individuals mobilize and transform the resources they possess to optimize and conserve their future resources. For example, one could use financial resources to outsource a stressful task to someone else to conserve psychological resources for the future. A career shock, such as COVID, is visible in Hobfoll's [30] model through the loss of resources. Individuals lose certain resources (e.g., stable employment, trust in the economy, financial resources) and thus reorganize the resources that remain for the future. According to conservation of resources theory, "resource loss is disproportionately more salient than resource gain" [11], which should make the effects hypothesized below more pronounced.

But what resources are relevant for careers? The pre-COVID research narrative was that social learning behaviors [x-xx], such as seeking feedback, information, and help, support individuals in building social resources (social capital) which, subsequently, can be transformed into favorable career outcomes [32–35].

The changes induced by COVID outlined above put into question whether these findings are still applicable. Put differently, these results, along with those of many other studies in this domain, were generated in environments marked by less social constraints and uncertainty. The transfer to the in-COVID or the post-COVID world is unclear. Hence, we now proceed with defining the associated gaps in greater detail.

2.1. Gap 1: The Nature of Social Capital in an In-COVID and Post-COVID World

This first gap concerns what social capital is and how it is built. In line with much of social network research, we can identify influences on the micro level initiated by individual early and mid-career researchers [36] and macro level influences introduced more directly by COVID. We discuss both in this section.

Social capital encompasses the "actual and potential resources embedded within, available through, and derived from" [2] an individual's network of relationships. In other words, an individual's relationships, and the social structures created thereby, provide opportunities (and limitations) to individuals. Nahapiet and Ghoshal [2] further break this down into (interdependent) structural, cognitive, and relational dimensions:

- The structural dimension refers to questions such as how to define who is central to a specific network or what social positions bring most information, power, or solidarity [37]. It is about showing who is accessible to whom.
- The cognitive dimension is about commonalities in the languages and codes used, as well as the narrative that is created through interactions. This is about interacting in compatible ways that lower transaction costs.
- Last, the relational dimension focuses on concepts such as trust and applicable norms between individuals that are necessary to give meaning to social capital and make it available to individuals

These interdependent dimensions introduce a complexity that many prior studies have failed to observe; instead, many focused solely on the structural dimension [38]. As we will argue below, this is also due to a lack of methodological innovations that would allow for the more comprehensive capturing of the other dimensions.

Note that while we are focusing on career-related social capital, we do not define what types of relationships could be career-related a-priori (see the realist perspective of boundary specification offered by [39]). In line with conservation of resources theory, non-occupational contacts, such as family members, could be an important resource for managing stress and providing stability in uncertain times. Using the terms of Fusulier et al. [40], this could be described as searching for the social configurations that provide the necessary stability to make an academic career.

Theories of social capital, which brought about a plethora of definitions, theories, and concepts have for the most part been formulated with other, now historic, contexts and means of communication in mind [41]. These theories and associated concepts need to be re-assessed for their use in the post-COVID world.

While network change is an important theme in social network research, this mostly concerns evolutionary change or short-time effects of highly volatile situations, such as emergency responses (e.g., [42]). In this proposal, however, we posit that the COVID pandemic influences the quantity and quality of social capital in an unprecedented manner. This shock not only lowers the general level of resources (quantity), but it also transforms some of the remaining resources (quality). Social capital may still be available during and after the shock, but it is available in a different form—for instance, its use is highly restricted due to travel limitations and social distancing policies. As an example, we may look to the function of social ties in terms of bridging (and linking) and bonding social capital [43]. Bridging and linking social capital connects individuals across some divides (e.g., across academic disciplines, across countries), and could be associated with novelty and development. Conversely, bonding social capital is necessary to integrate groups of individuals, build trust, validate ideas, etc. In how far do these functions line up with the increasingly digital in-COVID and post-COVID networks? How far does the meaning and implications of “bonding” change under a policy of social distancing? In what ways are social resources, such as trust, transformed by this change of medium? We expect a change in social capital akin to those associated with its increased use of the Internet, as discussed by Quan-Haase and Wellman [41]. They outline the debate of whether social capital is transformed, diminished, and/or supplemented through the new means of communication. Conclusions of their work include, for instance, that new forms of social capital require new measurement strategies or that changed social network compositions need to be accounted for.

We put forward similar arguments in this paper, as we are dealing with a similar challenge, where both technological and social changes are visible. However, compared to the beginnings of the Internet, there are notable differences. For example, the speed of development is on a vastly different level—COVID has changed and helped digitize many social processes within mere weeks. In addition, since many of these changes were invoked at the level of laws and because previous social events such as physical academic conferences were just not being organized, there is much less agency in deciding whether to play by these new social rules. The topic of getting vaccinated against COVID is a case in point, as it might play a large role for social acceptance [44]: arguably much more than using or not using the Internet in the early 2000s.

2.2. Gap 2: Antecedents and Outcomes of Social Capital in an In-COVID and Post-COVID world

What actions are necessary for individual researchers to build their social capital? A large body of pre-COVID career development literature points to what we call social learning behaviors such as feedback-seeking, information-seeking, or help-seeking, that promote social capital and, subsequently, lead to favorable career outcomes for, for instance, teachers [45], office workers [46,47], principals [48], or academics [49,50]. This strand of pre-COVID research suggests that early and mid-career researchers may counter resource loss by just doing more of whatever helped them build social capital before. But COVID has not only led to a reduction of resources, for example through job losses, one’s own health issues or those of others, increased care-taking responsibilities, and necessary adaptations to a new way to teach/work.

Qualitative changes in social capital need to be considered, too. We posit that through COVID-imposed conditions such as accelerated digitization, social distancing norms, and travel restrictions (which impede conferences, field work, and research visits), the very nature of how social capital can be appropriated and accessed has changed. To give one example, the role of physical proximity for accessing social capital was deemphasized, although it was often considered very important in the past [51]. Relatedly, it became more difficult to tell who the close and the more distant alters of a focal ego are (cf. weak ties vs. strong ties; [52,53]). Or how can distant acquaintances become important partners that also provide emotional support (“strong ties”, or also see bonding capital; [43]) through digital means only?

This topic has received little attention and puts into question the path to social capital accumulation suggested by pre-COVID data. This is because the very nature of what constitutes social capital—how it is built, and the functions it could be used for—may have been changed by policies that interfere with mobility, social lives and sped-up developments towards a fully digitized (working) world [54].

An adjacent gap concerns the consequences of social capital for career outcomes. Pre-COVID research has highlighted many positive outcomes of social capital, which apply also to our more specific domain of academic careers. For example, support of a mentor or supervisor is important, also with regard to the access to social networks (e.g., job opportunities) that they provide [55]. Froehlich et al. [46,56] note the importance of social resources as stimuli for further learning, both inside and outside academia. This point is supported by Van der Heijden et al. [47] and Van der Klink et al. [49] for non-academic and academic staff members, respectively. Hadani et al. [57] illustrate how the social network around a department does explain job-seeking success in academia quite a lot.

While established theories and empirical evidence agree with each other and point to the immense importance of social capital throughout one's career, it is important to note that this is also highly dependent on other personal and contextual factors. For example, Jungbauer-Gans and Gross [58] noted that differences between academic disciplines exist that need to be recognized. Or Angervall et al. [59] echo the point of many other researchers of how gender structures the availability of social capital and academic career outcomes. Importantly, these exemplary findings listed here let us better understand how social capital is formed and what its outcomes may be. However, given that the nature of academic social capital may have changed both quite vastly and sustainably as outlined above, these adjacent concepts need to be revisited and how they relate to social capital in an in-COVID/post-COVID world need to be revisited, too.

2.3. Gap 3: Methodological Challenges of Investigating Social Capital in an In-COVID and Post-COVID World

The third gap focuses on the research methods and designs necessary to close the first two gaps. To break new scientific ground, as outlined above, we also need appropriate methodological strategies. Previous research on social capital and related concepts has been overly reliant on quantitative mono-method studies [60,61]. A case in point is the multi-dimensional nature of social capital as outlined above, where previous literature has primarily focused on the structural dimension, which arguably can more easily be gauged using quantitative methods [62]. The problem with this is that through that rather one-sided methodological lens, we have amassed empirical findings and have built and developed theories that may have severe blind spots; in accordance with the one methodological pathway that has been taken.

Essentially, the question is whether the dominantly applied paradigm can give us a full view of the phenomenon [63,64]. While this is a very general statement and applicable to most academic fields, social network analysis is still an interesting case in point, as it does have strong qualitative roots that were largely forgotten during the technological advancements in the last three decades that made other types of data, most notably data extracted from the Internet, more convenient to harvest [65]. In that sense, the COVID-19 pandemic represents an opportunity not only to revisit concepts such as social capital (Gap 1) and its antecedents and outcomes (Gap 2), but also the very way of how these phenomena are being investigated.

Thus, in order to focus on understanding not only structures but also the meaning behind them and the role of individual agency, qualitative methods of social network analysis need to be considered, too [66,67]. This is especially true when considering the highly volatile research context created by COVID, which makes qualitative and mixed approaches more feasible than quantitative methods [68].

3. Discussion

In this conceptual paper, we have outlined gaps in the literature about career-related social capital research. We have done so based on a narrative literature review and an assessment of how the previous research studies can integrate a highly changed environment, the in-COVID/post-COVID condition. We have arrived at three gaps that concern the nature of social capital (Gap 1), its career-related antecedents and outcomes (Gap 2), and the methodological perspectives necessary to investigate it (Gap 3). In this discussion, we now attempt to establish (exemplary) avenues for further research that address these gaps.

3.1. General Discussion

It is our general view that a new branch of social capital research needs to be invested in that better informs in-COVID/post-COVID careers and life in general. It needs to be noted that COVID offers an opportunity for observing a rapid transformation; the implications of which may not only inform similar cases (e.g., future pandemics or career shocks), but post-COVID life in general. While the changes in terms of social life and digitization have been triggered by medical affordances and regulatory policies, there is some consensus that in many fields COVID just functioned as a catalyst, speeding up a transformation that would have happened anyway (e.g., [69,70]). This also means that certain aspects of life and careers in COVID will not revert to their pre-COVID status. Gibson et al. [71] also proposed using the momentum created by COVID to “reset science”, that is, rebuilding how the academic systems works so that it becomes friendlier towards early career researchers. Interestingly, many of the interventions or changes the authors provide in their commentary contain aspects of social capital (either at the system level in terms of improved collaboration between science, funding, and public or the individual level, for example, through increased mentoring opportunities).

From a subject-matter perspective, an avenue for further research that addresses the first and the second gap could explore questions such as the following: How do in-COVID/post-COVID networks compare to pre-COVID networks (e.g., in terms of density, size, social functions available)? What are the career-related, behavioral responses to the COVID-induced resource loss? How are resources being used (cf. conservation of resources theory) to make favorable career outcomes more likely? In what ways do individuals at different stages of their career react differently from each other in this aspect? How did the ways of accessing and appropriating social capital change? What is the role of changed means of communication relate to this? How does the nature and structure of social capital change independent of individuals' efforts?

The preceding suggested research directions hint at several but interdependent units of analysis and applicable theories. The resulting complexity calls for the application of a novel methodology that can investigate the questions from multiple perspectives, at different levels, and across time (see Gap 3). Two recent methodological frameworks seem especially focused on dealing with this kind of complexity: mixed-methods research [72] and social network analysis [73]. Social network analysis as a methodological lens is interesting due to its conceptual closeness to the concept of social capital and the aforementioned social learning behaviors. Past social capital research has relied a lot on quantitatively driven social network analysis.

However, in the past decade, this focus on quantitative methods has been criticized from multiple sides [60,66,67,74,75]. This criticism is especially relevant to the research gaps addressed in this paper, as the qualitative changes cannot be detected by quantitative mono-methods. Therefore, the perspective of mixed-methods research is useful, as it aims to integrate the strengths of various research approaches [76].

While there has been a recent push towards mixed-methods social network analysis [75], this methodological framework is still underdeveloped [77,78]. This opens another avenue for further research, namely in the direction of methodological advancement, examples of which are: What can be added through mixed-methods research when doing research in volatile research contexts (exemplified by the raging COVID-19 pandemic)?

How can phenomena with multiple levels, here exemplified by the structural, cognitive, and relational dimensions of social capital, be meaningfully captured through the combination of methods [79] In what ways can these qualitative and quantitative methods of social network analysis can be embedded in longitudinal and very exploratory research designs?

3.2. Revisiting the Concept of Career-Related Social Capital

In the above, we have reviewed the literature and pointed at specific gaps in our understanding of one major concept of career-related social capital and its associated theories. We have presented COVID as a reason; the concepts used in research need to be brought into alignment with the changed situation. However, our point can also be seen from a much broader perspective—taking COVID as an occasion to revisit those concepts and theories. As mentioned before in the general discussion, our current understanding of social networks is largely drawn from quantitative mono-method social network analysis. While this approach has received a fair amount of criticism, this methodological perspective is deeply and latently entrenched also in the concepts and theories that are being studied. Therefore, just adding incremental, more qualitative or mixed-methods based evidence to the discussion might not make much of a difference in a stable setting (cf. path dependencies in research, [80]). The sheer magnitude of changes triggered by COVID, however, creates an interesting opportunity to revisit all those concepts and theories that have been built on quantitative data and analysis in pre-COVID times.

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