



# **IDHEAP**

## **POLICY BRIEF**

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**The aim behind IDHEAP policy briefs is to make the general public aware of scientific research conducted at IDHEAP, underlining its pluridisciplinarity and multidisciplinary, and bringing out its implications for public policy.**

In the current health context, we felt it was appropriate that this first edition should be centred on health and healthcare. In it you will find reports on three different research initiatives. The first, by means of an experiment conducted within the administration of a Swiss town, seeks to understand how, in terms of management, staff can be encouraged to adopt new health technologies. The second conducted surveys to analyse the impact of telework imposed by COVID-19 on the health of workers in a French-speaking canton, and examines the potential implications for human resources management. The third and final research initiative reported on in this edition combines data from several sources and uses the trauma left by the transatlantic slave trade to examine the role and importance of historic events, and the passing on of patterns of mistrust from generation to generation, as explanations of current vaccination behaviour. It reflects on the lessons that can be learned to help meet the current challenges of COVID-19 vaccine uptake.

We trust you will find this edition excellent reading!

## **Big data and public administrations: the importance of employee buy-in**

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# Big data and public administrations: the importance of employee buy-in

Information Management unit Dr Stefan Stepanovic and Prof. Tobias Mettler

## Employee buy-in: the key to aligning big data and occupational health

In recent years, the concept of “big data” has gained a firm footing in the media and in public debate about the digitalization of work. In the public service, big data is often seen as a “black box”: attention is strongly focused on legal questions (concerning access to masses of data) or on the technical aspects of the tools involved, but little is known about the organizational challenges that arise from introducing these technologies into public organizations. One of the goals of the Information Management unit is to conduct applied research to gain an understanding of how employees of Swiss public administrations react to the implementation of big data technologies, particularly as regards occupational health matters. Specifically, we address the issues of (1) employee motivation in the use of devices to gather health data and (2) the use of such devices over the long term. This is essential, since successful implementation of such devices depends mainly on their regular voluntary use by individuals. Putting forward employee perspectives will thus provide a measure of the legitimacy and reach of this kind of technology for occupational health questions. The importance of this approach has been heightened by the COVID-19 pandemic, which has led to a rise in digital tracking of citizens and their health.

## A case study

To carry out this project, in 2018 we conducted a case study of the public administration of a Swiss town of 10,000 inhabitants. As part of a health promotion initiative within the administration, we offered to distribute “physiolitics” devices to volunteers for a period of six weeks. After an introductory session, a little over half the employees approached agreed to participate (19 out of 32 individuals, spread over the four departments partnering our project: tax administration, construction management, social services and the chancellery).

“Putting forward employee perspectives will provide a measure of the legitimacy and reach of this kind of technology for occupational health questions.”

So-called “physiolitics” devices (Wilson 2013) are wearable units (bracelets, smart watches, etc.) equipped with sensors that measure and analyse physiological (pulse, blood circulation, breathing, etc.) and behavioural parameters (physical activity, caloric intake, etc.). Using algorithms, they also provide the wearers with information on their state of health (typically, their stress level).



Figure 1 | Physiolitics devices used in the project, and visualization of stress levels

As regards data gathering, a mixed approach (qualitative/quantitative) was chosen. For the qualitative component, we held focus group discussions before, during and after the introduction of the physiolytics devices to identify what opportunities and risks participants perceived regarding the use of this technology. To complement this perspective, we added quantitative data based on the time the devices were actually used by participants. In this way, we were able not only to identify the determinants of employee buy-in, but also to monitor how it materialized over time.

### Results, discussions and implications

Finding out new information about oneself, having fun and creating a new routine within the organization are among the aspects that motivate employees to take part in a health promotion initiative (results obtained from our qualitative research). In contrast, aside from misgivings about organizational surveillance (the main obstacle to participation), factors that hinder buy-in are the expectation of a distinction between participants and nonparticipants, increased competition within the organization (health data creating points of comparison between individuals and new standards for physical activity) and the end of an “initial curiosity phase” (the device being seen as more of a gadget than a health promotion tool). The impact of these elements is seen particularly in the dynamics of use of the devices (see figure 2), with a constant significant fall in the number of active participants<sup>1</sup>. It thus appears that an item of big data technology does not on its own suffice to carry an occupational health programme.

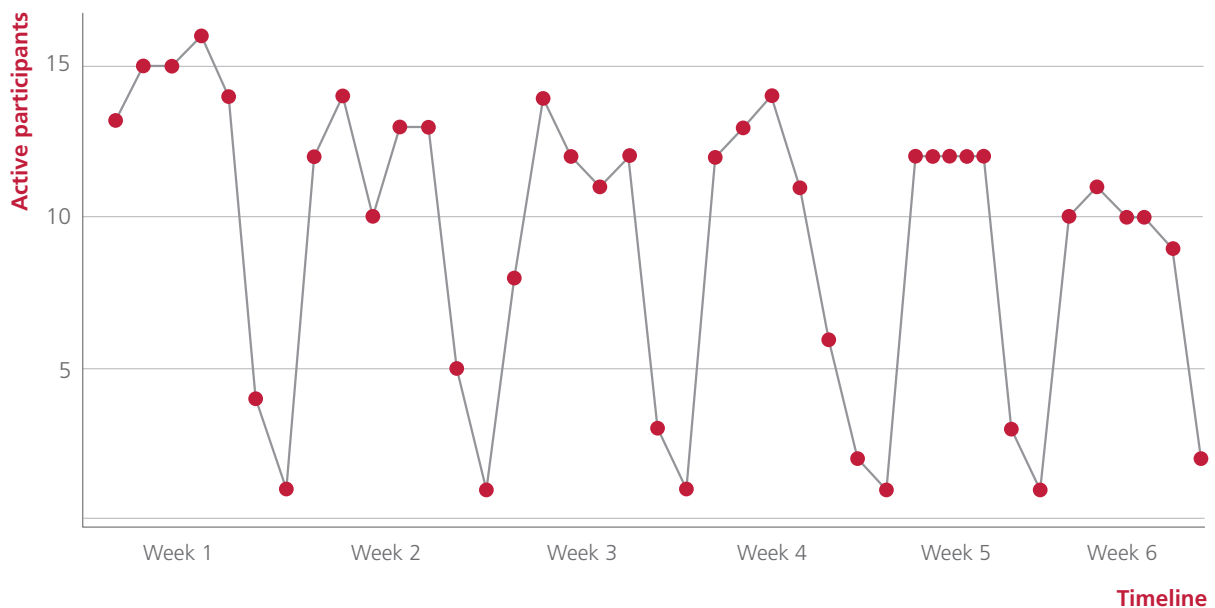



Figure 2 | Dynamics of physiolytics device use

<sup>1</sup> A participant is considered active if their physiolytics device was worn for at least five hours a day.



“The addition of gaming aspects (‘gamification’) or nonconstraining incentives (‘nudges’) could help maintain participation and increase the relevance of these systems in promoting occupational health.”



In any event, longitudinal observation would enable fuller results to be obtained from this case study—especially since the COVID-19 health crisis may have altered individual perceptions of occupational health issues.

### **References**

Wilson, H. J. (2013) Wearables in the Workplace, Harvard Business Review (91:11), pp. 23-27.

# Employee health and forced telework in the COVID-19 crisis: useful data for preparing future provisions by public bodies

Human Resources Management unit

Prof. David Giauque | Prof. Yves Emery | Frédéric Cornu and Karine Renard

## Telework and employee health: a crucial management issue

Occupational health has returned as one of the main concerns of human resource professionals since telework became the norm in the COVID-19 health crisis. This form of work—although not new, having emerged in the 1980s—was very broadly imposed on public body employees in order to comply with provisions introduced by the Confederation to prevent the spread of the virus. As a result, interesting new management questions emerge: how has telework been experienced by those who were compelled to adopt it? Has obligatory telework led to improved wellbeing for employees, or has it rather led to increased stress levels? These questions are important in that, assuming that the pandemic can be controlled, telework will very probably play a greater part in the future of organizations, including public administrations. Answering them is thus a crucial management issue.


## Investigation by questionnaire

To obtain some initial empirical answers to these new questions, the IDHEAP Human Resource Management unit conducted a number of surveys using questionnaires. Several French-speaking cantons were contacted during the first lockdown (March-May 2020), inviting them to participate in a survey on perceptions regarding telework. A number of them showed initial interest, but in the end only one agreed to send out a questionnaire to its workers. Based on a sample of over 1300 responses, we were able to gain a better picture of respondents' perceptions of several aspects of their work (characteristics of their work, social relations with colleagues and managers, the working atmosphere, their wellbeing, their engagement, their satisfaction, their levels of fatigue, work-life balance, etc.) both before and during obligatory telework. Our respondents gave their opinion on these various aspects in a single questionnaire, expressing their feelings and their experience in the two different periods.




### Useful results for preparing future telework provisions

Processing and analysis of our statistical data produced some interesting and useful results. First, the majority of respondents appreciated telework for certain benefits it brought them, starting with better professional life / private life balance (76% said that they were able to reconcile work and home life more easily during lockdown). They also appreciated the freedom they were given to organize their work (73% said that they were able to do so) and choose their place of work (67% said they had the opportunity) during the period of obligatory telework. However, social relationships—with colleagues and hierarchical superiors—suffered particularly: a significant drop in perceived cooperation with colleagues and managers can be identified by comparing the averages of responses before and during the period of obligatory telework.



“In terms of occupational health, obligatory telework seems to have had a beneficial effect, as the table below shows. It also emerges that those who have no dependent children and managers have a significantly more positive perception of their work and their performance during the period of obligatory telework.”



This outcome indicates that sociodemographic characteristics can also influence respondents' answers.

<b>Respondents' occupational health</b>	<b>Before/during obligatory telework related to COVID-19</b>	<b>Average</b>	<b>Standard deviation</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>
I feel emotionally drained by my work	Before	2.61	1.2	50%	24%	26%
	During	2.37	1.2	58%	23%	19%
I feel exhausted by my work	Before	2.61	1.2	51%	24%	26%
	During	2.33	1.2	60%	22%	18%
I have to make a physical effort in order for my working day to go well	Before	2.31	1.1	59%	24%	17%
	During	2.14	1.1	64%	23%	13%

Of course, these are partial results, and represent a snapshot of individual experiences at a specific time. Accordingly, although our study tends to show that telework has affected occupational health, this may be due to other factors that we did not measure. Other surveys, repeated at regular intervals over longer periods of time, are therefore needed in order to more clearly identify the effects of telework on the health of public employees. These empirical data are significant, and could enable political decision makers and HR specialists to adjust future telework provisions, and to provide employees with support in order to prevent any deleterious effects of telework on health and wellbeing.

# Trust and the demand for vaccination: what can history teach us?

Economics of Regulation unit Prof. Laure Athias and Dr Moudo Macina

The current context of the pandemic is marked by mistrust regarding vaccination in certain parts of the population. This phenomenon is not new and arises from the fact that in environments where information acquisition is costly and/or imperfect (all the more so in the presence of rumours and conspiracy theories), people use “rules-of-thumb,” that is, cognitive shortcuts, in making their decisions. Trust, and its counterpart mistrust, are therefore an important issue in health, whether in the efficacy of vaccines or in institutions. Mistrust can therefore be expected to vary depending on local cultural, institutional and political contexts, and this has been proved empirically. The purpose of this research, however, was to estimate the inertia of this mistrust—in other words, the extent to which traits of mistrust inherited from previous generations persist over time—to explain health behaviors in a given context. The study is based on a historical shock of immense proportions: the Transatlantic Slave Trade from Africa, whose effect on contemporary trust has been widely documented in the literature. This research is therefore profoundly interdisciplinary, standing at the junction of economics, history, anthropology, medicine and sociology.

## The research methodology

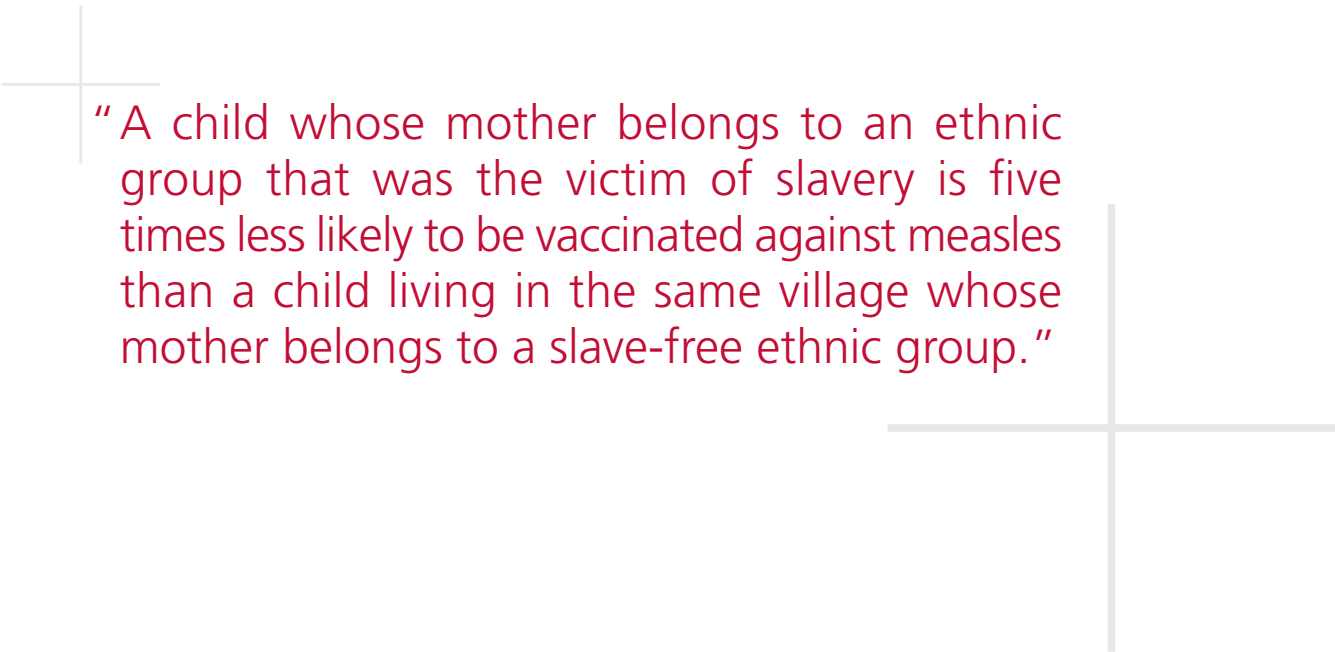
This study combines historical data developed by two economics researchers, Nathan Nunn and Léonard Wantchekon, on the slave trade by ethnic group in 18 countries of Sub-Saharan Africa, with individual data on the vaccination status of children (under the age of five) against measles, geolocated at the cluster level, from the Demographic and Health Surveys programme (DHS) collected between 2010 and 2014 (these databases also provide a large amount of information on the individual characteristics of the child, the parents and the household).

“The objective is to examine the relationship between the historical exposure of ancestors to slavery and the vaccination status of their descendants against measles.”

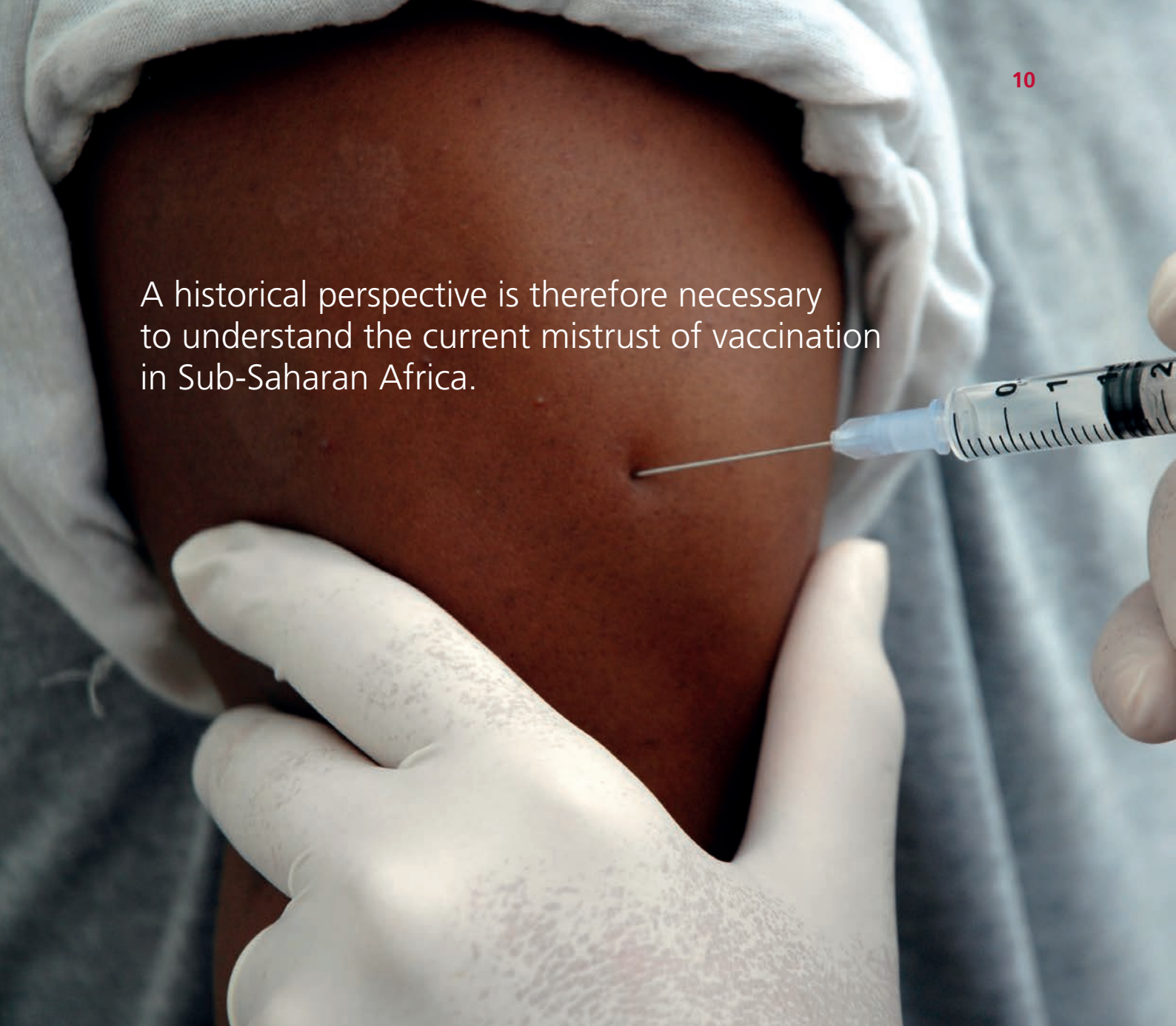
More specifically, the goal was to estimate the extent to which patterns of mistrust are passed down through generations. This means it was essential to be able to compare the behaviour of individuals faced with the same healthcare supply, the same institutions and the same local culture with their ancestors' historical exposure to slavery as the only variant. This has been made possible by migration that has occurred over the centuries, with the result that today a village (a cluster) can be inhabited by people from different ethnic groups. Moreover, in order to isolate solely the effect of the historical shock on contemporary behaviour regarding vaccination, we introduced a large number of control variables, including the initial cultural preferences of ethnic groups concerning preventive behavior (using data on the pre-colonial ethnic group norms developed in 1967 by the anthropologist George P. Murdock).

### Results, discussions and implications

Our results indicate a significant negative effect of ancestors' exposure to slavery on descendants' demand for vaccination. In particular, **a child whose mother belongs to an ethnic group that was a victim of slavery is five times less likely to be vaccinated against measles than a child living in the same village whose mother belongs to a slave-free ethnic group. This effect is stronger than that of standard determinants of the demand for healthcare, such as income and level of education.** We use the demand for other health services to show that the effect of historical exposure of ancestors to slavery affects trust-sensitive health services only (e.g. it affects consent to free anemia blood tests but not the use of insecticide-treated bed nets to prevent malaria).



“A child whose mother belongs to an ethnic group that was the victim of slavery is five times less likely to be vaccinated against measles than a child living in the same village whose mother belongs to a slave-free ethnic group.”



A historical perspective is therefore necessary to understand the current mistrust of vaccination in Sub-Saharan Africa.

In other words, the most hostile attitudes to vaccination may be the result of historical shocks that undermine trust in the very long term, and thus not necessarily related to a lack of education or to a particular political ideology. **This perspective could also shed light on current behaviour towards vaccination in Western countries, especially since the implications for public policy are potentially huge. This would involve taking the historical specificities of certain groups into consideration in the design and dissemination of health policies, including preventive policies.**

### Références

Athias, L. & Macina, M. (2021) Demand for Vaccination in Sub-Saharan Africa: The Vertical Legacy of the Slave Trade, MPRA Paper No. 109335.

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