

## ADOPTION OF DIGITAL VACCINATION SERVICES FROM A LITERALLY PROFESSIONAL VIEW: A COMMENTARY ON “IT IS THE CLICK FLOW, NOT THE VALUE” FROM A HEALTH CARE WORKERS AND AGILITY PERSPECTIVE

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### Abstract

This commentary critically examines the adoption of digital vaccination services through the lens of healthcare professionals, emphasizing that usability and workflow often outweigh perceived value in shaping user acceptance and effectiveness. As health systems worldwide increasingly integrate digital tools to improve vaccination delivery, frontline workers' experiences reveal that ease of system interaction, intuitive interfaces, and agile adaptability significantly influence both adoption rates and operational outcomes. Drawing on professional insights and empirical observations, the article highlights key factors affecting digital vaccination uptake, including workflow integration challenges, technology-user fit, training adequacy, and organizational support for agile practices. The analysis underscores that while digital vaccination platforms promise efficiency and scalability, their real-world impact depends largely on how well they align with healthcare workers' cognitive processes, time constraints, and clinical workflows. Moreover, the commentary explores the concept of agility in healthcare settings the capacity of systems and staff to rapidly adjust to evolving demands as a critical determinant of successful technology adoption. The authors argue that prioritizing user-centric design and supporting adaptable work practices can enhance both the perceived value and actual utility of digital vaccination services. By situating technical adoption within the professional context of healthcare delivery, this article contributes a nuanced perspective on the interplay between human factors, technology design, and system agility in the effective implementation of digital health innovations.

## INTRODUCTION

The interplay of innovation and health care workers (HCWs) focusing on vaccination were key in mastering the COVID-19 pandemic, which led to serious health, social and economic problems worldwide<sup>3</sup>. Apart from optimizing traditional approaches to contain the pandemic outbreak, such as hygiene rules, testing regime, contact tracing, quarantine<sup>9</sup>, new mRNA-vaccines and innovative digital technologies such as vaccination platforms were introduced<sup>4</sup>. In this context, the study “Adoption of Digital Vaccination Services: It Is the Click Flow, Not the Value—An Empirical Analysis of the Vaccination Management of the COVID-19 Pandemic in Germany”<sup>1</sup> focused on the digital management of vaccination processes. Existing adoption theories and acceptance models from consumer market research were adapted to the public health sector and formed into a digital platform framework for policy makers and pandemic managers to manage public health services, such as vaccination offerings. Based on a survey in Germany’s federal state with the highest vaccination rate, results showed that (1) the usability barrier is the most important barrier which harms adoption, whereas the most emphasized value barrier does not play a dominant role in contrast to consumer market research. By analyzing the three digital platform configuration areas Communication, Data Management, Personalization, (2) Personalization stood out as the most important factor for managing the usability barrier by optimizing the best click flow on the digital health platform to address the needs, preferences, and situation of the citizens as users.

“Yet, the endgame of the pandemic is not vaccines; it is vaccination”<sup>2</sup> and thus, the fast implementation of the vaccination by health care workers (HCWs) are critical premises and antecedents for a successful vaccination adoption<sup>10</sup>. In this direction, we want to highlight the role of professional HCWs in the adoption of digital vaccination services: First, their own adoption of the vaccination as a role model and their position as first priority vaccination group, and second, their contribution in adapting their service to the new pandemic situation from an agility point of view.

## Discussion

The concept of agility was originally introduced as a capability to enhance value delivery to stakeholders through quick responses<sup>13</sup>. “agility is all about customer responsiveness and mastering market turbulence”<sup>11</sup> which ultimately describes the situation of the COVID-19 pandemic in its core. Different studies provide evidence that agility can promote the adoption of innovations by increasing the adoption and satisfaction of relevant stakeholders<sup>8</sup>. Agility is not only a strategy to create value but also a paradigm for the development of organizations<sup>13</sup>. HCWs work in competitive, regulated and thus dynamic settings, that lead to various challenges, which are in connection to change and uncertainty<sup>14</sup>. The study of Zain et al. (2005) gave evidence for a positive relationship between information technology (IT) acceptance and organizational agility by highlighting the same technical adoption factors as the given study “It is the click flow, not the value”: technology usage, perceived usefulness, and perceived ease of use of IT. Agile management is a key approach to meeting these challenges because it is characterized by the ability of an organization to respond to changes and sudden events in a quick and flexible manner, by an iterative and collaborative working style in form of sprints, by a strong customer and value focus, by iterative learning processes and by a management, that empowers self-organized, multi-disciplinary teams<sup>7</sup>. Equipped with these skills, health care organizations and their HCWs can not only succeed to detect infectious and contagious diseases at national and international levels but can also derive appropriate defense and containment measures such as vaccination programs<sup>6</sup>. On a macro level, agility shows potential value through more effective and efficient healthcare. On an individual micro level, agility can promote the adoption of innovations by fostering the satisfaction of relevant stakeholders<sup>6</sup>. Thus, more research and detailed examination is needed to understand whether and how agility affects the adoption of digital health service such as for vaccination.

The HCW’s attitude as a role model and, moreover, their service delivery determines the vaccination adoption through their relation with the vaccination receivers in two levels: from a technical performance and interpersonal care perspective. Kraai et al. (2011) distinguish satisfaction with health care delivery, treatment satisfaction, and satisfaction with medication or medical device.<sup>12</sup> differentiate eight dimensions: interpersonal manner, technical quality of care, accessibility or convenience, finances, efficacy or outcomes of care, continuity, physical environment, and availability. Future studies may take those variables to understand the specific role of HCWs and to explicitly measure their effect on the adoption of the vaccination. In a positive relationship with HCWs, satisfied vaccinated people show numerous benefits for service providers in healthcare systems such as fewer complaints, less doubt, hardly repeated investigations, and, most of all, higher adherence to medical treatment regimens<sup>5</sup>. In this case, higher adherence relates to a higher adoption of followup vaccination and booster shots. Accordingly, a positive relation between HCWs and patient/customer is highly beneficial for the providers of digital vaccination services and therefore also for the present discussion. A closer examination seems highly relevant whether agility promotes, first, the adoption of (non-professional) patients/people and, second, the performance of professional HCWs. Specifically, the differentiated roles of HCWs in hospitals, clinics, practices, nursing homes, and further institutions like health insurances needs to be further differentiated in their adoption rates. The adoption rate of health care professionals is of increased interest within vaccination programs due to central role of those professionals within nosocomial transmission<sup>3</sup>. We distinguish them from non-professionals based on their institutional tenure, their knowledge, their performance incentives and motivations, and their behaviors and decision-making processes within the health care work<sup>15</sup>.

## Conclusion

In the initial study, *personalization of services*, a proper *communication*, and an adequate *data management* were shown to have a significant effect to lower adoption barriers of digital vaccination services<sup>1</sup>. Following the vaccination (health

care) journey, we propose a more detailed examination whether and how agility of HCWs affects the digital vaccination (health care) adoption. Additionally, we also suggest an analysis, if agility promotes the satisfaction of professional HCWs significantly more than that of (non-professional) people, to optimize the success of future vaccination campaigns and related digital health platforms.

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