Article

Exploring the Configuration of Institutional Practices—A Case Study of Innovation Implementation in Healthcare

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Abstract: In this study we provide a fine-grained description of the micro-processes of innovation through a qualitative study of the implementation of telemedicine innovation in a healthcare organization. Our qualitative analysis uses a mix of participant interviews, observation techniques and archival data sources. We use the concept of translation to describe the movement of ideas and practices through social interrelationships. Our results suggest that the implementation of innovation involving changes in extant institutional practices is a result of a translation during which actors assess not only their specific role within a given institutional practice but also how their actions influence the broad outcome. Our results bring to the fore the role that interactions between organizational actors and institutional practices play in the implementation of innovation. Consistent with the translation perspective, our results suggest that the implementation of innovation is mainly an organizational change process facilitated by a concurrence of meaning or the lack of it among organizational actors. Our study provides new evidence on the institutional practices that are created, maintained, modified as well as disrupted during the implementation of externally developed innovation.

Keywords: institutional practices; actors; translation; Colombia; institutional work; ANT

1. Introduction

There is a wide agreement that innovation plays an important role in enhancing organizational effectiveness. However, organizations may fail to reap the benefits of innovation due to ineffective implementation [1,2]. The issue of innovation implementation assumes special significance when innovation involves changes in extant institutional practices [3,4]. As institutional practices tend to be deeply embedded within the organizational structure, any change in such practices may require the collective effort of multiple organizational actors [5,6]. However, the competing priorities of employees belonging to different professions may impede the changes necessary for the effective implementation of innovation [7–11]. Several scholars suggest that success in innovation implementation may depend on the purposive actions of multiple organizational actors, as well as institutional mechanisms involving regulatory, normative, and cognitive-cultural elements [11–14]. Surprisingly, despite the wide literature on innovation in organizations [15–17], there is limited evidence on the institutional practices that are created, maintained, modified, or disrupted during the implementation of externally developed innovation [18,19]. For instance, who are the principal organizational actors or stakeholders that influence the change necessary for the implementation of innovation? Similarly, what is the outcome of the implementation process in terms of the configuration or reconfiguration of institutional practices? Although institutional work scholars emphasize the purposive actions of organizational...
actors, we know little about how the interplay between institutional practices and the purposive actions of organizational actors leads to the configuration (and reconfiguration) of institutional practices during the implementation of an innovation [20,21].

To gain a fine-grained understanding of the micro-processes of innovation implementation, in this study we examine how the interaction between organizational actors and institutional practices leads to the configuration and reconfiguration of institutional practice during the implementation of telemedicine innovation. Telemedicine is the remote delivery of healthcare services (diagnosis, treatment, and prevention of disease and injuries) by (all) healthcare professionals using information and communication technologies [22]. It is an innovation that has the potential to transform not only how healthcare services are delivered in rural and inaccessible geographical locations but also to improve the overall efficiency and effectiveness of patient care [23]. Telemedicine also represents a major shift in healthcare delivery, a specialist-centered medical service model in which medical specialists (doctors and nurses) play the dominant role in legitimizing what constitutes efficient and effective institutional practices [24]. Indeed, the adoption of telemedicine innovation can upend this top-down model with (new) non-medical professionals such as health administrators and/or related IT administrators playing a more important role in the delivery of healthcare services. This in turn can create resistance among the specialists. Thus, despite its several benefits, the uptake of telemedicine has been relatively slow and low [4]. An additional barrier is the complexity of healthcare organizations in which technology (machine, equipment, software, and practices) and a multiplicity of human actors (managers, administrative personals, doctors, and nurses) need to interact in order to approve and implement the change necessary for the implementation of the innovation [25–27]. As organizational actors (medical and non-medical) have their own distinct understanding of the appropriateness of an innovation, professional differences could come in the way of effective implementation of innovation [28,29]. Our study provides novel insights into the interrelationships between organizational actors—human as well as non-human (institutional practices)—and their actions in influencing institutional change brought about by the introduction of telemedicine innovation.

Our empirical analysis is based on understanding the meaning that organizational (human) actors attach to changes brought about by an innovation w.r.t. to the taken for granted, accepted, and established ways of doing things (institutional practices) [30]. We use the translation perspective as the conceptual lens to situate the understanding of innovation implementation within an organization. By emphasizing the local context, the translation perspective proposes that innovations, especially those developed elsewhere, are often subject to variation because of the way they are understood and applied in a new setting [20,31,32]. This perspective is a significant departure from both the deterministic technology adaptation model and the institutional perspective that accords primacy to the macro-institutional factors in organizational change. By taking a more micro-view of change the translation approach allows us to understand the interactions that occur within intra-organizational settings when new practices, ideas, objects, and technology are introduced in an organization [31].

Following the micro-foundation approach in organizational studies, the main contribution of our study is to show the micro-processes of the interaction between organizational actors and institutional practices through which innovations are embraced (or resisted) and become institutionalized (or not) [33]. This way we overcome a major limitation of macro-oriented quantitative innovation research, that fails to account for the richness of the contextual environment under which organizational phenomena such as innovation occur [34–36]. Secondly, by considering innovation implementation as a translation process we show how the interaction between organizational actors and institutional practices lead to the emergence of new meanings and relationships that in turn influence collective and organization-level outcomes such as the institutionalization of practices [35]. Third, by considering a comprehensive set of organizational actors that includes frontline workers, we provide a more fulsome account of the innovation process within organizations [11].
2. The Micro-Process of Innovation Implementation

Institutional practices are commonly accepted ways of resolving problems or performing actions by the organizational collective [30]. Within organizations, institutional practices tend to be taken for granted and are executed habitually [30]. They are different from organizational routines—the repetitive patterns of interdependent organizational actions—because institutional practices have a thematic coherence, due to the shared meanings and understanding they carry among organizational actors [37,38]. As commonly accepted ways of resolving problems or performing actions, institutional practices can mobilize organizational actors from multiple professions. This is despite organizational actors belonging to different professions/specialties holding a distinct cognitive and normative understanding of what constitutes effective and efficient institutional practices [39,40].

However, institutional practices as accepted and established ways of resolving problems or performing actions construct as well as constrain organizations. For instance, as institutional practices and their impact on organizational performance is understood and gains legitimacy, the adoption of innovations (new practices), that involves new physical and cognitive efforts on the part of the organizational members, may lead to resistance [3].

In recent times several scholars have used the translation perspective to understand how organizations deal with the issues related to the introduction of new ideas, practices and/or technologies perceived to be beneficial to the organization [41]. According to this perspective, (organizational) change is fundamentally a change in meanings, claims and interests among organizational actors [31], and the translation of an innovation is its adaptation by organizational members, during which some elements from the source may be retained while at the same time transforming some elements of the innovation to suit the new/local context [42]. In other words, the translation approach recognizes that the outcome of innovation is not absolute, and that acceptance and resistance are normal outcomes in innovation implementation. Following this paradigm, the actor–network theory (ANT) provides an explanatory mechanism of how translations unfold in organizations. The ANT emphasizes the interactions between organizational actors [31,43]. As per the ANT, the implementation of innovation can be regarded as a process of translation in which human beings are not passive actors but actively participate in its adoption and implementation [11,44]. For instance, during the translation of an innovation, organizational actors engage in actions to change the interests of other actors to achieve the stated objectives of the innovation, thereby mobilizing organizational actors to join a network of interests group [45]. Ref. [12] identified several strategies that (human) actors may use while dealing with innovations involving change in extant institutional practices. In using such strategies, the agency is directed at a community of actors belonging to different professions within the organization. However, in organizations with actors of diverse professional expertise the implementation of innovation could depend on the understanding and agreement of diverse organizational actors (belonging to different professions) in translating an externally developed innovation within the framework of the extant institutional practices. As a consequence, the outcome of implementation, i.e., whether an innovation is implemented and how it is implemented, depends on how the community of actors belonging to different professions rationalize the innovation w.r.t. the extant institutional practices [37]. Such rationalization may involve the use of institutional mechanisms [13,46], for instance, (1) regulatory institutional mechanisms involving formal rules designed to achieve compliance as well as informal rules such as social exclusion or inclusion in case of non-compliance [46,47]; (2) normative institutional mechanisms that include the values and norms reflected through rules of thumb, standard operating procedures, or occupational standards to produce conformity with a given situation [47]; (3) cognitive institutional mechanisms related to beliefs, mental models, and interpretations of shared meanings that help individuals process, organize, and understand new information and experiences [46,47]. Considering the embeddedness of institutional practices, when the implementation of an innovation goes beyond the mere application of an equipment or technology but requires the changes in established institutional practices, the outcome of innovation implementation is more
complex and can result in the disruption of institutional practices, the configuration of new practices, the reconfiguration of extant institutional practices (modification), as well as the maintenance of extant institutional practices [21].

3. Research Setting

Since 1993 Colombia has implemented a universal health insurance scheme (Law 100) under which all citizens, irrespective of their ability to pay, are entitled to a comprehensive health benefit package [48]. The Colombian universal healthcare insurance plan is implemented through health insurance organizations known as Entidades Promotoras de Salud (EPS). The EPS could be public or private organizations. In order to receive the benefits of Law 100, each individual must select or get affiliated with an EPS. In addition to providing the health insurance, the EPS is responsible for delivering healthcare services either directly or through healthcare institutions known as Instituciones Prestadoras de Servicios (IPS). Generally, the various EPS in Colombia manage a network of public and/or private companies IPS.

Our case organization, Empresa Social del Estado (ESE) Ladera, hence referred to as ESE Ladera, is one of the public EPS that uses a network of 38 health centers (IPS) to provide healthcare services in the hilly rural region near the southwestern city of Cali, Colombia. The region, populated mainly by minority communities comprising indigenous tribes and descendants of Afro-American immigrants is a designated conflict zone due to the presence of armed militia groups, insurgents, and drug traffickers. Coupled with a widely dispersed and socially vulnerable population residing in a difficult terrain along with the large number of activities that a target beneficiary must physically undertake to access the services (such as request appointments, exams, medicines, among others) the service provision of ESE Ladera was considered less effective. To address the problem, the management of ESE Ladera identified a new model of healthcare (hybrid) service delivery using telemedicine. The implementation of this hybrid service model began in 2009 with need identification, during which the specific pain points of ESE Ladera with respect to the provision of healthcare services in its 38 health centers were identified. The subsequent decision to adopt the telemedicine innovation was an attempt to improve the healthcare delivery services keeping in mind the needs of the principal beneficiaries. The adoption decision mainly involved the managerial personal and the IT systems leader, while the implementation phases involved different human actors, such as medicine specialists (general practitioners, specialists etc.) and health professionals such as nurses. A longitudinal study covering the period 2009–2017 provided us the opportunity to identify and understand how the human actors belonging to different professions responded to the adoption of telemedicine innovation and how it influenced the institutional practices.

3.1. Data Collection

To obtain complete information about the interaction between human actors and the institutional practices in which they are involved, multiple sources were used for data collection. First, a series of semi-structured interviews were conducted with different actors of the organization, which included managers and administrative staff of the organization, practitioners, specialists, other health professionals, and patients. Due to the difficulty of determining a priori the number of people, at this stage a statistical representation was not sought, but rather the understanding of the discourse surrounding telemedicine [49]. In this stage, ten interviews were conducted, two for each type of actor identified as a participant in the implementation of telemedicine innovation in the organization. This was followed by a theoretical sampling [49], that is, the decisions about the choice and collection of the empirical material were taken in the process of collecting and interpreting the data with the aim of elaborating and redefining the categories that constitute the analytical framework of this research. The “snowball” technique [50] was used to identify new actors/informants recognized for their knowledge and participation in the implementation process.
The interview was conducted in Spanish by the lead researcher of the study, both through face-to-face interactions and through video (skype) between May 2015 and November 2016. The duration of the interviews varied between 15 and 60 min. The interviews mainly focused on stimulating discussions around the different institutional practice(s) with which actors used to carry out their functional activities and how the telemedicine innovation influenced them, along with the actors’ expectation and understanding of the effectiveness of telemedicine innovation not only with respect to their specific professional requirements but also in a broader sense (the benefits to the patients and the organization). The interview questions specifically focused on the implementation of telemedicine, especially with respect to the respective actor’s role in the implementation of telemedicine and focusing on the changes (functions, roles, structures, practices) brought about due to the implementation of the telemedicine innovation. Table 1 provides a summary of the interview questions to the study’s participants. The interviews were recorded and transcribed.

Table 1. Interview Questions.

| Actors       | Questions                                                                 |
|--------------|---------------------------------------------------------------------------|
| Manager      | • What motivated ESE Ladera to work with telemedicine?                     |
| Administrative staff | • Did you participate in the process of selecting and adopting telemedicine at ESE? |
| Engineers    |   ◦ Could you please describe how those processes were?                    |
|              | • Who within ESE participated in this process?                            |
|              | • What are the situations that you remember the most in the implementation process? |
|              |   ◦ Successful situations                                                 |
|              |   ◦ Difficult situations                                                  |
|              | • Have changes had to be made to the ESE to implement telemedicine? (Functions, roles, structures, practice changes) |
|              | • How have ESE’s administrative practices been affected after the implementation of telemedicine? |
|              | • How have medical care practices been affected after the implementation of telemedicine? |
| General practitioners | • What are the similarities between a telemedicine consultation and a traditional consultation? |
| Specialist | • How have medical practices changed after the implementation of telemedicine? |
| Nurses       |   ◦ What are the differences that you find in your medical practice in the use of telemedicine compared to a traditional consultation? |
| Patients     | • What differences did you find with telemedicine compared to a consultation with a doctor in the traditional way? |

Observation techniques and documentary analysis are also used [51]. These were aimed at uncovering the interrelationships between human actors and the institutional practices, and in this way corroborating and elaborating on the discourses that emerged during the interviews. The authors of the study carried out detailed observations concerning the institutional practices to understand the telemedicine consultation and the interactions of different actors such as general practitioners, nurses, specialists, telemedicine assistants, and patients at different locations of the organization. It included six rural health centers and two urban health centers for a total of eight locations. In many cases, the observations helped illuminate, clarify, and modify some of the recorded interviews, while in others our
assessment of a particular interaction was confirmed or challenged, in which case a new avenue for exploration emerged. Documentary sources that included internal sources of data such as organizational plans and process maps were used to understand the institutional practices that were used before the telemedicine innovation was introduced. The triangulation of the speeches of the interviews, field notes (observations), and documents allowed for the understanding of the congruence, or lack of it, between the words and the actions of the participants [49]. As the interviews, observations, and document collection progressed, the final sample was redesigned based on the saturation of the discourse and its degree of depth. Once interviews of 34 actors and 17 observations were reached, the collection of information was stopped because it is considered that a data and theoretical saturation was reached [49,52]. Of the total of 34 interviews conducted, 44% correspond to specialists and general practitioners, 29% to nursing assistants, 15% to administrative personnel, and 12% to patients who had consultations through telemedicine.

3.2. Data Coding and Analysis

This study uses discourse analysis to identify and understand the meaning that organizational actors associate with telemedicine. Discourse analysis uses written or oral texts to understand intertextual features and identify patterns of meaning [53]. The focus of discourse analysis is on understanding the underlying concepts and ideas contained in a particular set of texts [54]. Discourses help uncover the meanings that organizational actors assign to their own actions and the actions of the social system with which they interact and thus are useful for understanding interactions that occur when actors act out their actions in a given context [55].

In order to identify the discourses that surround the process under study and demonstrate the interaction between the institutional practices and the informants (actors), the full texts of the collected material (interviews, observation notes, and documentary evidence) were coded, that is, data segments were categorized with a short name that simultaneously summarizes and describes each data segment [49], with the help of the Atlas Ti software. In this process, two types of coding were carried out: first, an initial coding during which no new categories/codes are created but simply imputed from the text data. The initial codes are provisional, since when monitoring them the need to collect new information and generate new codes can be identified, or to rename them to improve their fit with the data while seeking to capture and condense the meanings and actions [49]. In this first coding, special terms used by the participants were also used, that is, in vivo codes, which serve as markers of meanings reflecting assumptions, actions, and imperatives that frame their actions [52]. A total of 1359 codes were identified in this first stage of coding—some examples of these codes are “remote hands” and “human-technology binomial”. [49] argues that this iterative process of data collection and analysis facilitates the subsequent development of the categories by helping the researcher to deepen and understand the research problem. In our study this process helped with the identification of the actors and their actions in support or opposition to telemedicine. Before starting the next coding phase, a debugging of these first codes was carried out, which included unifying codes that were in the plural and the singular, upper and lower case, and accents and synonyms, resulting in 360 codes. Second, a focused coding was carried out to identify the most significant and frequent codes. It helped synthesize and explain broader data segments, generating more direct, selective, and conceptual codes called concepts [49]. We focused on three categories of concepts that emerged from this codification: actors, institutional practices, and outcomes. The outcomes were categorized following Lawrence and Suddaby [12]. In the following section we present the results of our analysis. As the interviewee’s original language was Spanish, relevant data quotations were translated into English while presenting the results.

4. Results

We present our findings by first looking at some of the discourses surrounding the implementation of telemedicine innovation followed by data reduction to identify institu-
tional practices that were subjected to change (creation, modification, maintenance, and disruption) during the implementation of telemedicine innovation. As mentioned earlier, discourses help in understating the meaning that individuals associate with objects, events, and any significant activity [55]. In our case discourses provided insight into how organizational (human) actors belonging to distinct professions understand the impact that telemedicine might have on the outcome of healthcare delivery. For example, with respect to the use of telemedicine in healthcare, the discourses around actions necessary to implement telemedicine innovation show a concurrence in the understanding of the impact of telemedicine, which in the case of administrative personnel are mainly deemed an aid to the healthcare service rather than a disruption.

“We usually handle 5 or 6 specialties: Internal Medicine, Dermatology, Gynecology, Family consultation, the nutritionist and tele-rehabilitation that is being done last. So, it is the same model, but what is being impacted by the telemedicine is avoiding those queues and decongestion of the delivery system by making adjustments to the information system”. (Administrative personnel 2)

“[telemedicine] is a health care modality, it is not that we do a different consultation, no, it is the same consultation, but it uses different tools”. (Administrative personnel 1)

While such views give the indication of support for telemedicine, we also find discourses in which concerns were raised about the role of technology. It is an indication that while technology, in our case telemedicine technology, could be a useful tool, its usefulness needs to be evaluated with respect to the technology’s ability to provide the desired healthcare solution. We thus find evidence of diversity of meaning among actors belonging to the same profession, as indicated by the following quote.

“We are not a technology company. The purpose of telemedicine is to solve your health problem . . . . . it is not only to inform you about the diagnostic. It is to take you to a solution”. (Administrative personnel 3)

With respect to the change in the institutional practice that would result from the implementation of telemedicine, we find a concurrence among the administrative personnel, as revealed by the following discourses.

“Well, everything that has to do with authorization procedures is a positive change because the user no longer has to travel to an urban area to do all the authorization procedure”. (Administrative personnel 4)

“Administratively, we did not really change much, what changed was simply the way of serving patients”. (Administrative personnel 1)

Table 2 organizes the discourses of one type of actor, in this case the administrative personnel member. Column 1 of Table 2 classifies the various discourses with respect to the main effect (actor’s perspective) of the implementation of telemedicine. Similarly, to understand the meaning among organizational actors belonging to different professions, we compare the discourse(s) among the different organizational actors as shown in Table 3. The comparison reveals five distinct categories of discourses.
Table 2. Discourses about the effect of Telemedicine.

| Effect of Telemedicine | Discourses                                                                                                                                 |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| The impact of telemedicine. | “We usually handle 5 or 6 specialties: internal medicine, Dermatology, Gynecology, Family consultation, the nutritionist and tele-rehabilitation that is being done last. So, it is the same model, but what is being impacted by the telemedicine is avoiding those queues and decongestion of the delivery system by making adjustments to the information system” (Administrative personnel 2) |
|                         | “[telemedicine] is a health care modality, it is not that we do a different consultation. No, it is the same consultation, but it uses different tools . . . . . . ” (Administrative personal 1). |
|                         | “We are not a technology company. The purpose of telemedicine is to solve your health problem, that is, it is not to inform you that you have, that you suffer in order to take you to a solution” (Administrative personnel 3). |
| Change in the organizational structure | “With the introduction of Telemedicine, we could not function as we had been doing so far—there needs to be a whole change in the structure and the way we work if we are to take advantage of this innovation” (Administrative Personnel 5) |
|                         | “Second, let’s say someone very operational was needed—someone operational who will apply the incipient logistics chain that we have: authorizations, registry orders etc. or someone who will document the patients—we do not know how telemedicine will impact this practice” (Administrative personnel 1) |
| Organization and modification of service delivery. | “Well, everything that has to do with authorization procedures is a positive change because the user no longer has to travel to an urban area to do all the authorization procedure” (Administrative personnel 4) |
|                         | “Administratively, we did not really change much, simply the way of attending the patients, which is an issue that depended on us” (Administrative personnel 1) |
| Modification and use of new software. | “Since we did not have the money to buy specialized telemedicine software, we needed to adapt. Fortunately, the software provider provided us with some modifications of the clinical history, laboratory results, well a series of things and things worked well” (Administrative personnel 3) |
|                         | “Accessing internet in the rural area is not easy, but today we have a good internet service provider and we have learned. We made modifications to the software so that it packaged the information of videos, images and data in a all in one package” (Administrative personnel 1) |
|                         | “We started to fine-tune the issue of bandwidth . . . the information system for telemedicine needs a certain bandwidth, so when we implemented telemedicine, we had to start expanding the bandwidths” (Administrative personnel 3) |
| Integration of Systems | “And then we began to include healthcare services. First we made the technological concept clear to all, and then we went on to the healthcare concept, which is to train doctors and nurses, train assistants, train and all those who are involved in the process” (Administrative personnel 2) |
|                         | “Well, when we started the implementation of telemedicine what we found was that we had many internal problems that was unrelated to telemedicine as a new technology. We did not have an integrated system, that is, the payroll part was done with one system, accounting with another and so for each process. Telemedicine helped us integrate our systems” (Administrative personnel 3) |
|                         | “We had to have an information system that will give us the ability to integrate each health care center, each care process and each administrative process” (Administrative personnel 3) |
|                         | “We are already connected, so by being connected and having an integrated system already in the 39 IPS we can see what they do in Pichinde, in Saladito” (Administrative personnel 3) |
### Table 3. Actors, Discourses, and their Interpretation.

| Actors                                      | Discourse 1                                                                 | Discourse 2                                                                 | Discourse 3                                                                 | Discourse 4                                                                 | Discourse 5                                                                 |
|---------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| Administrative personal (managers and administrative staff) | “It is the same query (consultation) but uses different tools, tool that allows us to improve access to health services for populations that are geographically dispersed” | “The telemedicine models are many: synchronous and asynchronous, within what I have investigated, what we have generated for ESE Ladera the best model is synchronous” | “One of the great motivations for the ESE Ladera Health Network to work with telemedicine was the location of 14 health care centres in the rural area. The traditional method provides poor service to those users. Telemedicine resolves many of the problems of access for users in remote locations” (Administrative staff interview). | “I consider that telemedicine has a promising future, I consider that it is a very useful tool to improve access to health services, not only to populations that have access difficulties but also in populations where the offer of specialization is very limited.” |                                                                                   |
| General Practitioners.                      | “a consultation through a television, a video call provides us the possibility of communicating with the specialist and thus guide the process of this patient” | “It is a consultation modality through which certain specialties or even general medicine, can effectively reach patients through technological resources”. | “It thus shortens distances, it helps the patient a lot so that they do not have to move, especially due to the sudden economic situation of that person”. |                                                                                   |                                                                                   |
| Specialists                                 | “The general practitioner provides us the qualified inputs necessary and the diagnosis that have the possibility of having better results” | “Taking into account the concept of telehealth, it helps by technological means, or provide this same service over a distance, that means tele and remote medicine at a distance”. | “I see this more as a new opportunity that can offer this service to people who are in need, who are far away, who have difficult access” |                                                                                   |                                                                                   |
| IT personnel                                | “It is the implementation of new technologies focused on improving the community’s health problem” |                                                                                   | “Telemedicine for me is the future of the provision of health services in dispersed areas to improve the quality of life of those people who do not have access to health”. |                                                                                   |                                                                                   |
Table 3. Cont.

| Actors                                      | Discourse 1                                                                 | Discourse 2                                                                 | Discourse 3                                                                 | Discourse 4                                                                 | Discourse 5                                                                 |
|---------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| Health professionals (Nurse, nursing assistants, etc.) | “It is medicine on television, to say so to the patient, but it is that the doctor, the specialist, is in a remote location and the patient is here at the IPS, so through the monitors and the computers they carry out the consultation”. | “It is a form of consultation on television in order to reduce expenses, time, and distance for users”. |                                                                               |                                                                               |                                                                               |
| Patient                                    | “Provide service through television”                                         |                                                                               |                                                                               |                                                                               | “It’s okay because one doesn’t have to move to another part and the general practitioner doesn’t have to move here either”. |

| Interpretation                             | Telemedicine as a tool                                                      | Modality for provision of services                                            | Solution to organizational problems                                        | Solution to social problems                                                 | Future as health in service provision                                      |
(1) Telemedicine as a tool. It is linked to concepts such as a resource, television, computer, systems, and technology. This category of discourse reveals a micro-focus among organizational actors in which technology (or the adopted innovation) is considered as one of the tools for improving the healthcare delivery.

(2) Telemedicine as a service provision modality. It includes concepts related to the different types of telemedicine, such as general and specialized consultation and synchronous and asynchronous models. Here the discourses revolve around the various ways an innovation can be employed by the organization.

(3) Telemedicine as a solution to organizational problems. This interpretation reflects the need of ESE Ladera to improve the provision of health services in its IPS in rural areas through telemedicine.

(4) Telemedicine as a solution to social problems. It focuses on the perceived benefits that telemedicine generates in the population served through this modality, with related concepts such as vulnerable population, patient costs, travel costs, and distance.

(5) Finally, telemedicine as a future in the provision of services is an interpretation that reflects the desire to give continuity to this modality and to extend it both in ESE Ladera and in other health organizations, with related concepts such as innovation, novel, and different.

As is evident from Table 3, the different organizational actors interpret telemedicine in different ways, which is explained more by their individual differences in level of training and occupation and the profession to which they belong, as well as by the way in which they interact with telemedicine. For instance, the actors who have participated in the entire implementation process or in most of its phases, such as administrative personnel and specialists, interpret telemedicine as a solution not only for organizational but also for social problems. Furthermore, they perceive it as the future of the provision of health services, while the actors who have participated only in the implementation phase, such as general practitioners, nursing assistants, and patients, interpret it as a tool and modality of service provision.

In general, organizational actors give meaning and sense to an innovation based on their interactions with it. As such, it is expected that with new types of institutional practices, such as adding a new step in the consultation process, as well as a new type of actor, such as telemedicine professionals, and a new type of interactions between telemedicine professionals, medical specialists, and patients, some institutional practices will be altered and new ones will be created. Therefore, following the discourse analysis and as per institutional work perspective we classified and organized the institutional practices that were either disrupted, maintained, created, and/or modified. Overall, we identified 20 institutional practices that were subject to change, of which eight were new practices. Of the remaining twelve, eight were modified, two practices were maintained, and two practices were disrupted. Column 1 in Table 4 shows the actors that are involved in the given practice, while Column III presents the institutional practices that were configured (created, modified, maintained, and disrupted) during the implementation of the telemedicine innovation.
Table 4. Actor involvement, Institutional practices, and Institutional work.

| Actors                        | Institutional Practices                        | Institutional Work |
|-------------------------------|-----------------------------------------------|--------------------|
| Administrative personal       | Contact patients                              |                    |
| Telemedicine staff            | Accompany patient                             |                    |
| Billing assistant             | Specialist support                            |                    |
| IT Systems Leader/staff       | Support with patient                          |                    |
| General Practitioner          | Ensure connectivity                           |                    |
| Nurse                        | Develop technological (telemedicine) capabilities | Creation          |
| Medical Specialist            | Disseminate telemedicine                      |                    |
| Patient                      | Demand provision of the service               |                    |
| Medical Specialist            | Consultation diagnosis                        |                    |
| Patient                      | Interview                                     |                    |
| General Practitioner          | Track and control patients                    |                    |
| Nurse                        | Develop knowledge                             |                    |
| Telemedicine Staff            | Fill out clinical history                     |                    |
| Administrative personal       | Medical liability                             |                    |
| EPS (Insurance Institutions) | Apply protocols                               |                    |
| Non-Medical: Telemedicine Leader, Telemedicine assistant; Telemedicine staff; Systems leader; Systems Staff. Non-medical: Functional staff (Administrative assistant; Billing Assistant). Medical: General Practitioners, Specialists, Nursing, Patient. Macro-actors: EPS (Insurance Institution), Colciencias (Regulator). |

4.1. The Disruption and Creation of New Institutional Practices

An example of the institutional (administrative) practices that were disrupted is the authorization process by patients in which some activities were discontinued. This discontinuation was implemented through a normative mechanism involving new procedures to produce conformity with the given situation.

“an informed consent is generated, that the patient agrees with, the presentation is made by the general practitioner to the specialist and all three interact”.
(Administrative personnel 5)

“the user no longer has to travel to the urban area to do all the authorization process”. (Administrative personnel 3)

The discontinuation, in turn, created new institutional practices involving new actors, such as nursing assistants, telemedicine assistants, and technologies—those who did not participate in the previous authorization process(es), thus generating new interrelationships between human and non-human (technology) actors.

“Let’s say the model was that the user had to make an appointment, queue for the appointment, then queue for billing. With telemedicine they simply arrive at the health care centre after pre-scheduling an appointment. Once the patient arrives the administrative assistant is in charge and takes care of the whole process, for instance, assigns the appointment(s) and manages the entire management of patient care during the visit”. (Administrative personnel 3)

Interestingly, with the new practice, some actors (general practitioners) who did not participate in the specialized consultation became a central part of the interactions between specialists (doctors) and patients. This interaction between the patient, the specialist doctor, and the general practitioners or nurses became possible due to the mediation of technology (new actor) and created a new dynamic.
“Here is how the interactions between general practitioner and the receiving specialist occur—The generalist introduces the case (patient), explains the medical history, as well as any preliminary physical examination, and the specialist makes a diagnostic impression and we begin to interact with the patient, the camera is put on the patient so that they can see each other . . . “. (General medical practitioner 4)

Such direct interactions between the patient, the general practitioner, and the specialists created new relationships between individuals belonging to different professions who would previously have had minimal direct interactions, which in turn eases the implementation of telemedicine.

“The fear that I am only the general practitioner is already overcome, and they [specialist] develop trust towards general practitioners through virtual interaction. The same is felt by the patients because of the dialogue between the three”. (Administrative personnel 4)

4.2. The Maintenance of Extant Institutional Practices

Here we find that the definition of a service fee is one of the two administrative practices that are maintained (Table 4). In Colombia the fee charged by the IPS for a given health service is regulated by the Government. Despite the fact that the services provided through telemedicine have additional costs which must be charged by the IPS to their insurers (the EPS), the EPS does not recognize such differences and thus opposes the differential pricing. This led to a situation of conflict between two actors of the Health System. The conflict was resolved to the extent that the actions undertaken by the actors to maintained the existing institutional practice. “The provision of services under the modality of telemedicine is regulated, but the costs of the value of the provision are not. Colombia has a thousand regulations, but how to charge for telemedicine, no, we are not clear on that” (Administrative interview 1). “The state does not have regulated prices for telemedicine consultations” (Administrative interview 3). “The greatest limitation we have is with respect to the billing. With the EPS there is always some difficulty to authorize the consultation through telemedicine and their payment” (Administrative interview 2). As such, despite the efforts of the telemedicine leader to change this institutionalized practice, the implementation of telemedicine did not result in a new service fee to reflect the additional cost. “The maximum they have achieved as an agreement [with the EPS] is almost the same fee of a normal consultation [face to face], and not with all [EPS]” (Administrative interview 2). Here, again, a regulative institutional mechanism in the form of compliance was used to maintain an existing institutional practice.

4.3. Modification of Practices

One of the healthcare practices that have presented major challenges is the physical examination. The modification of the physical examination generated a certain type of opposition on the part of some general practitioners and specialists due to the myth that exists about certain specialties. “Sometimes a direct vision is needed, let’s say in Gynaecology, one cannot show certain intimate parts because it is not the right thing to do” (General medical practitioner 4), the demonization of the new relationship due to lack of specialized knowledge—“there are certain components of the physical examination that sometimes due to lack of preparation is not our specialty anyway” (General medical practitioner 4)—and the valuation of in-person physical examinations by specialists—“I am always in favor of contact with the patient, a physiotherapist who does not touch a patient is difficult” (Specialist 2). Likewise, there is resistance from some medical specialists, due to the dissuasion of regulatory elements such as medical liability and normative mechanisms such as the routinization of the practice. One of the great barriers among the specialists was the fear or resistance to the issue of responsibility: “I am guided a lot by what the general practitioner is telling me and if perhaps the general practitioner examined him and
missed something important who is going to be responsible if something goes wrong?” (Specialist 5).

After the implementation of telemedicine innovation, the physical examination of patients is done with remote hands. As medical specialists are not present physically to perform the exam, they rely on general practitioners or nursing assistants to carry out this practice, generating new interrelationships and assigning these professionals a more prominent role in a practice in which previously they had no or limited participation. However, this is not to mean that we agree to all of their initial diagnoses. There are situations when “I [specialist doctor] depend on what the [general] doctor does there in physical presence of the patient. I have to depend on that data. However, there could be differences between the what the generalist measured because he is turn in dependent on the nurse for the administration/reading. Suddenly, in interaction with patient there might be a discrepancy in what the patient who is in a remote location says and the data that’s available to me” (Specialist 5).

For the modification of this practice to take place, the actors used a normative mechanism. Through the construction of normative networks, “the auxiliary [nursing] collaborates with taking vital signs of a patient who needs to take vital signs. In addition, it helps us a lot with palpation, since with the cameras we [specialists] can look at some physical deficiencies that the person has, and they can corroborate us with the inspection and tell us and reaffirm what we already saw” (Specialist 2), “the assistants, in some cases, are like the hands of the doctor who is on the other side” (Nursing assistant 4).

5. Discussion

The study of innovation implementation, especially the implementation of telemedicine innovation in the healthcare sector, focused on different aspects of the phenomenon using distinct theoretical lenses. Authors such as [56,57] studied telemedicine using the technology acceptance model, the theory of planned behavior, and innovation diffusion theory to understand its acceptance among healthcare professionals, specifically physicians. Ref. [58] explores the complexity of implementing telemedicine as a project, using microprocesses of organizational change theory. Ref. [59] uses the theory of compensatory adaptation to examine the user and technology capabilities and [60] use the contingency theory and path constitution theory to study the implementation of telehealth. Furthermore,Refs. [13,61] uses Actor Network theory to study the practices and their relation in the implementation of telemedicine. However, little is known about the interactions between telemedicine and the purposive actions of multiple organizational actors that lead to the creation, maintenance, or disruption of institutional practices. Furthermore, there is limited understanding of how those interactions (interrelated actions) lead to the implementation of telemedicine and adaptations, and to the mutations therein.

Our study provides a micro-view of the implementation of innovation with new insights surrounding the adoption of innovation in a specialist-driven organization using discourse analysis. Our findings are in line with the idea of professionals as institutional change agents [62]. We also find a diversity of meaning among organizational actors with respect to the role of innovation in achieving the objective of the organization. The diversity of understanding could be the result of (1) Organization actors from different professional backgrounds having different interpretations or understandings of the meaning of telemedicine. Although such understanding could be a myopic view tethered to the narrow confines of one’s professional expertise and experience, and thus could lead to resistance to the implementation of an innovation, we nonetheless find, as [63], that professionals engage in interdisciplinary work to implement new practices in order to respond to an organization-level need for effectiveness. (2) The organization actors that participate in multiple institutional practices tend to have a more holistic understanding of the innovation and are therefore more likely to appreciate how it influences the overall system. Participation in this sense is the interaction between the actor and the institutional practice, between actors themselves, and between practices that are necessary in achieving
organizational goals. This supports the ANT perspective that emphasizes interactions as fundamental to the process of translation [64]. Such holistic understanding eases the implementation of innovation. (3) We find that organizational actors not only use actions to create new practices or to break [disrupt] current ones, but also how to maintain institutionalized practices. That is, institutional change is the result of a series of efforts made by actors to maintain their practices and is not necessarily the result of lack of action (inertia) on the part of the actors. (4) The actions (institutional work) required to initiate and change institutional practice(s) during the implementation of innovation need not be conflictive but can also be collaborative [65].

Overall, we find that the principal actors or stakeholders that influence the implementation of innovation are not necessarily the top management but those who actively participate in the given institutional practice [63,66]. Furthermore, successful implementation requires the agreement of actors belonging to different professions. In other words, ‘boots on the ground’ or those who are responsible for operationalizing the high-level objectives of the innovation play a critical role in the implementation of innovation [62].

6. Conclusions

In this study we provide a fine-grained description of the micro-processes of innovation through a qualitative study of the implementation of telemedicine innovation in a healthcare organization. Our qualitative analysis uses a mix of participant interviews, observation techniques, and archival data sources. We use the concept of translation to describe the movement of ideas and practices through social interrelationships. Our results suggest that the implementation of innovation involving changes in extant institutional practices is a result of translation during which actors assess not only their specific role within a given institutional practice but also how their actions influence the broad outcome. Our results bring to the fore the role that interactions between organizational actors and institutional practices play in the implementation of innovation. Consistent with the ANT perspective, our results suggest that the implementation of innovation is mainly an organizational change process facilitated by a concurrence of meaning or the lack of it among organizational actors. Our study provides evidence on the institutional practices that are created, maintained, modified as well as disrupted during the implementation of externally developed innovation. Overall, our study provides a micro level understanding of how translators as organizational actors belonging to different professions do translation work on the ground, i.e., how the organizational actors translate an externally developed innovation given the extant institutional practices. This way we advance the understanding of how translation occurs as an organization goes through the process of implementing an innovation, thereby suggesting the importance of separating the process aspects of translation and how ideas—or, more specifically, innovative ideas—are translated on the ground.

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