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Examining Information Systems Use to Facilitate the Workplace Accommodation Process

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Abstract

BACKGROUND: The workplace accommodation process is often affected by ineffective and inefficient communications and information exchanges among disabled employees and other stakeholders.

Information systems (IS) can play a key role in facilitating a more effective and efficient accommodation process since IS has been shown to facilitate business processes and effect positive organizational changes.

OBJECTIVE: Since there is little to no research that exists on IS use to facilitate the workplace accommodation process, this paper, as a critical first step, examines how IS have been used in the accommodation process.

METHODS: Thirty-six interviews were conducted with disabled employees from various organizations. Open, axial, and selective coding were part of the analysis. Fuzzy set qualitative comparative analysis was used to identify different levels of IS use based on participants' descriptions.

RESULTS: An IS used in the workplace accommodation process consists of electronic request form, accommodation checklist, special budget, specific role, ancillary service, formal policy and procedure. There are different levels of IS use in the current accommodation process. The high-level IS use often results in a better accommodation performance than the low-level IS use, including high efficiency, high effectiveness, and low emotional tolls. Nevertheless, the high-level IS use often uses a specific, inflexible template as well as disregards human elements in the accommodation process.

CONCLUSIONS: This work provides implications that future IS design should raise awareness of disability and accommodation, account for individual differences, involve multiple stakeholder inputs, as well as address the fundamental social issues in the accommodation process.

Keywords: Work rehabilitation, technology, disability management, job satisfaction, computing, organizational design and management

1 Introduction

Around 15 percent of the world's population, or roughly one billion people, live with a disability [1]. About 80 percent are of working age. A diverse and inclusive workforce, including people with varying abilities and talents, is critical in driving innovation and creativity through different ideas and perspectives [2,3]. Studies have shown that employing disabled people¹ can lead to numerous organizational and societal benefits [4], including an increased bottom line [5], improved employee morale and commitment [6], decreased numbers of potential lawsuits [3], and improved social morality [6].

Disabled people, however, face enormous barriers to employment [1]. To illustrate the issues they encounter, imagine the following situation. Ms. G has a disability. She uses a power wheelchair and has restricted arm mobility. After struggling for several years after college to find a job, she is hired by a growing tech company. Ms. G applies for workplace accommodations once in her position. She discloses her disability and accommodation needs to the human resources (HR) department and her supervisor, Ms. K. She needs an accessible workstation and assistive technology for the computer equipment. However, she does not ask for a flexible work schedule, which would help her better manage pain associated with her disability, because she is concerned about increasing the work of her coworkers and damaging her work relationships with them. Ms. K receives the accommodations request and struggles with ways to process the request since she has no training in such matters. Ms. K is unfamiliar with accommodation options or how to address other accommodation related issues that may arise. In addition, HR often focus on limitations and are not familiar with job duties, thus they are unable to provide accurate and sufficient information about whether or not one's ability fits for a job. Plus, there is no previously developed list of potentially suitable accommodations (i.e., similar accommodation solutions made in the past). Thus, Ms.

¹ I recognize that there is still a debate in the disability community regarding identity-first versus person-first language [7]. There are valid arguments on both sides. In this paper, I use identity first language, which is more in line with the social inclusion aspect and the critical lens I apply, and will continue to learn from research and seek more guidance from self-advocates to inform our work and the language I use.

K is limited in her ability to make good accommodation decisions to help Ms. G. Ms. K worries that even if she is able to get accommodations for Ms. G; they may not be the best ones. She does not control the flow of accommodation-related resources (e.g., accommodation budget) and cannot ensure activities are coordinated between departments (e.g., HR and finance department). After some delay, however, Ms. G finally receives her requested accommodations. However, there is no follow up about how the accommodations are working and if they need any modifications since Ms. K helped put the accommodations in place.

This complex, unclear, and slow process, with almost no organizational support, is unfortunately common in many organizations today. The accommodation process (decisions and outcomes) is affected by ineffective and inefficient communications and information exchanges among disabled employees, multiple internal (e.g., HR, supervisors, and Information Technology (IT) staff) and external stakeholders (e.g., clinicians and vendors) [8-12]. The process is also not well informed, and often lacking key stakeholders' perspective and needs relevant information on specific disability or individual needs [8,10]. Information systems (IS) can play a key role in facilitating a more effective and efficient accommodation process since IS has been shown to facilitate business processes and effect positive organizational changes [13,14]. IS can help improve access to information, optimize processes, suggest new organizational strategies and solutions [15]. For example, the use of Electronic Health Records (EHR) in health care organizations can change the three Vs (volume, variety, and velocity) of health care data collected as well as increase efficiency and effectiveness of health care processes [15,16]. Along with analytics of those data, they also provide innovative solutions to patient care, such as monitoring patients' health and patient education [15,17]. However, there is little to no research that exists on IS use to facilitate the accommodation process because the dominant IS paradigm, grounded in functionalism, has not paid enough attention to system design from the perspectives of disabled users [18]. This paper, as a critical first step, examines how IS have been used in the accommodation process through empirical research with disabled employees from various organizations and discusses a new IS design informed by the critical disability theory.

2 Methodology

2.1 Data Collection

The present study aims to understand how IS has been used to manage the accommodation process for disabled employees in the workplace. Semi-structured interview is an appropriate method to acquire a rich understanding of this topic because it allows participants to talk around the main topic of IS use in the accommodation process as well as uses open-ended questions to elicit elaborated responses and new ideas [19,20]. A semi-structured interview protocol (see Appendix A) was developed based on a systematic literature review in IS, disability, and management studies as well as reviewed by experts both in academia and the disability and accommodation field. Overall, the interview questions were about disabled employees' experiences in the accommodation process and how IS were used in that process. The interview protocol and informed consent were approved by the Institutional Review Board (IRB) on July 28, 2020. Thirty-six interviews were conducted from August to December of 2020. The average interview length was 60 minutes and the total number of transcription pages was 486.

To gain access to participants, a recruitment email was sent to Facebook disability groups, LinkedIn disability groups, and other disability organizations in North America². The sample comprised 36 participants (see Table 1): 10 males and 26 females. Five participants worked at governmental organizations, 11 at educational institutions or organizations, 14 at other non-profit organizations, nine at for-profit organizations, and two were self-employed. Five participants had worked in multiple organizations. The average organizational tenure was eight years. With respect to disability types, 20 participants had vision disabilities, eight had cognitive disabilities, four had hearing disabilities, and four had mobility disabilities. Participants signed an IRB approved consent form and those who completed the interviews were given a \$10 Amazon gift card. Archival files such as accommodation request forms and

² All the participants except two were from the United States. Those two participants were from Canada. The requirements for accommodations in the Canadians with Disabilities Act are similar to the requirements in the Americans with Disabilities Act.

organizational policies were also collected from some participants and organizational websites when available. According to the approved IRB informed consent, a summary of this study's findings has been shared with the participants.

2.2 Data Analysis

The qualitative data was analyzed following Strauss and Corbin's coding process [21]. The NVivo 12 software package was used to support coding and analysis. The first step, open coding, identified descriptive categories through a sentence-by-sentence analysis. For some sentences/paragraphs, multiple codes were attached to capture different dimensions the texts delivered. This open coding process resulted in 937 open codes covering the broad set of concepts in 36 interviews. Then axial coding was initiated to integrate open codes from the same dimensions, name and arrange categories such as different levels of IS use, and explore subcategories. Further, fuzzy set Qualitative Comparative Analysis (fsQCA) was used to classify these different levels of IS use. After axial coding, selective coding was conducted by aggregating different categories into a coherent picture and developing theoretical themes. Table 2 presents examples of several passages and how they were coded from open, axial, to selective codes.

2.3 Fuzzy Set Qualitative Comparative Analysis

fsQCA is based on fuzzy algebra and explains to which degree an antecedent condition exists in a given case [22]. It needs to create a truth table to assign data into 0, 0.5, 1 and form different combinations of antecedent conditions [22,23]. Once this step of the truth table is done, each row is assigned an outcome value (0, 0.5, 1) [22,23]. Thus, both the different combinations of antecedent conditions values and their associated outcome values are summarized in the truth table [23]. The next step is to examine the relationship between causally relevant antecedent conditions and a specified outcome [22,23]. The fsQCA software helps detect whether or not relevant combinations of antecedent conditions is likely to lead to a specified outcome by calculating frequency, consistency, and coverage of each combination of antecedent

conditions [24]. This approach allows us to examine whether or not more than one combination of antecedent conditions leads to a specified outcome [22,24-25], which is a good fit with the present study because IS used in the accommodation process may consist of different components and the interaction effects of these components may determine various levels of IS use and thus impact disabled employees' experiences in the accommodation process.

In the present study, to conduct an fsQCA, the first step is to code IS components in the accommodation process based on participants' descriptions. If an IS component is used in a participant's organizational accommodation process, it is coded as 1; if a participant indicates the absence or negation of an IS component, it is coded as 0; if a participant indicates the ambiguous condition of an IS component, the cell is left blank. Then, based on the interaction effects of these IS components, three levels of IS use (high, low, and none) in various organizations are coded. If more than two IS components are used in an organizational accommodation process, the level of IS use for the accommodation process is coded as 1 (high); if only two IS components are used in an organizational accommodation process and other IS components are absent, the level of IS use for the accommodation process is coded as 0.5 (low); if none of these IS components are used in an organizational accommodation process, the level of IS use for the accommodation process is coded as 0 (none). Appendix B presents the raw data table of the values of IS components based on each participant's descriptions and the predicted values of levels of IS use. Next, an fsQCA is conducted to examine the relationship between different combinations of IS components (antecedent conditions) and the level of IS use (outcome). The fsQCA software version 3.1 helps calculate frequency, consistency, and coverage of each combination of IS components [25]. Frequency indicates the number of cases in each level of IS use. Consistency shows the proportion of cases sharing the combination of conditions [23,24]. Coverage shows the proportion of the causal combination sharing instance of the outcome [23,24]. As recommended for small sample sizes, this research sets the minimum frequency of cases analyzed as 1, the minimum consistency of cases analyzed as 0.70 [22,26]. Consistency scores equal to or above 0.70 indicate that the combination of antecedent conditions is

necessary leading to a specified outcome [24,27]. Thereby, the three levels of IS use in the accommodation process are classified as shown in Table 3. Raw coverage indicates which share of the outcome is explained by a certain causal combination, while unique coverage indicates which share of the outcome is exclusively explained by a certain causal combination [17]. Since the causal combinations for the three levels of IS use do not overlap each other, the raw coverage and the unique coverage for each level respectively are same. The detail of the classification results will be presented in the results section.

3 Results

In this section, the results about the high-level IS use and the low-level IS use in the accommodation process are presented by analyzing the empirical data. How different levels of IS use affect accommodation performance including both IS effects and emotional tolls is also examined.

3.1 Classification of Different Levels of IS Use and High-level IS Use

Since the high-level IS use may cover all the IS components that emerge from the interview data, for the sake of readability, first, a typical accommodation process with the high-level IS use is illustrated, and then, different levels of IS use based on the interaction effects of these IS components are explained.

From the interview data, in a typical accommodation process with the high-level IS use (see Figure 1), as the first step, an employee accesses an established accommodation checklist on an organization's website, fills out an electronic request form, and sends the form to an HR specialized team that is in charge of all accommodations for the organization. Then, an assigned HR specialist in the team examines the request and discusses with the employee if needed. If the employee does not know what accommodations they need, a needs evaluation (ancillary service) can be provided by an assistive technology (AT) specialist. After the request is approved by the HR specialist, the HR specialist purchases/implements the requested accommodation(s) paid by a special budget. If the accommodation(s) are technology-related, IT staff help install them. If the expertise of AT is needed for the implementation, AT specialists can be engaged.

There are hiring requirements and formal organizational policies that are in place to support the whole process. The interview data were used to develop these IS components, as shown in the interview excerpts below.

Electronic request form:

Tiffany³: It was an online form... the computer people would fill it out and send it up to the centralized source...

Accommodation checklist:

Isabella: On that website, a lot of what they have is like a catalog so they have it broken up into different things, vision, whether you have a hearing impairment, that kind of thing. Once you click on the specific category of things that you're looking for, it will give you a list of all of the things that they offer and what they do and their basic details.

Special budget:

Tiffany: That program is a centralized source of accommodations... If you need adaptive equipment, my office did not have to pay out of the office budget for any accommodations that I got from [the centralized program].

HR specialist:

Isabella: It [the accommodation process] is usually pretty smooth because they [HR specialists] basically send all the information to who they need to send it to and then they contact you to see when is a good time for us to set it up and they tell you hey, this is when

³ All participant names have been changed to pseudonyms.

it's gonna going to be shipped. Here's your tracking number so you can see when it's going to come in.

AT specialist:

Jack: The vocational counselor... put in a request for the AT [Assistive Technology] specialist to install the [accommodation]...

Ancillary service:

Judy: [A case manager] developed a service plan and that's what I went to be evaluated and that's when it all began, and then they contacted the technical guy. [The case manager] referred me to him, and then I would get in contact with him and we had work things out.

Hiring requirement:

Isabella: There's some kind of something that says the federal government has to have a certain percentage of employees that are disabled.

Formal process:

Grace: ...by the time you apply you actually submit an application and then you get a phone call from a navigator who will ask you some more questions and really clarify. Then they will schedule a workplace assessment of a needs assessment. After that they will have to source out like the different options which I would have to review. Then of course, they have their conversation with the employers or they're negotiating. After all those pieces have been done, then they will actually go ahead and order the equipment. After that they have to schedule a time to come in and install everything or put together whatever that looks like. So the entire process is about I would say approximately three months.

In Table 3, different levels of IS use in the accommodation process are classified using fsQCA. There are nine high-level IS use cases. The cases classified as high-level IS use cases have access to electronic request form, HR specialist, and formal process and may have access to accommodation checklist, special budget, AT specialist, and hiring requirement. The consistency score is 1, therefore, how these IS components are combined is a necessary combination leading to high-level IS use. The coverage score of 0.56 indicates that how these IS components are combined explains 56 percent of high-level IS use in this sample. There are 14 low-level IS use cases. The cases classified as low-level IS use cases only have access to electronic request form and formal process and do not have access to other IS components. The consistency score is 1, therefore, how these IS components are combined is a necessary combination leading to low-level IS use. The coverage score of 0.99 indicates that how these IS components are combined explains 99 percent of low-level IS use in this sample. There are 10 no IS use cases. The cases classified as no IS use cases do not have access to any IS component in the accommodation process. The consistency score is 1, therefore, how these IS components are combined is a necessary combination leading to no IS use. The coverage score of 0.99 indicates that how these IS components are combined explains 99 percent of no IS use in this sample. Since the present study focuses on IS use in the accommodation process, the cases in the no IS use scenario will not be analyzed.

3.2 Low-level IS Use

In an accommodation process with the low-level IS use (see Figure 2), the accommodation tasks still need to proceed following the order of request, negotiation, approval, and implementation. In the low-level IS use scenario, organizations do not have HR specialists as a central point of the accommodation process. A disabled employee often needs to submit their accommodation request to their supervisors or HR staff. Then there may be a lot of back-and-forth negotiations and different levels of approvals among these stakeholders. For example, Daisy shared that,

Daisy: You had to write to, if I'm remembering this correctly, to human resources and submit a copy to the [boss' title]... who then sent it to the [boss' boss' title] when they in turn with human resources and then they would approve or deny the accommodation.

After the supervisors or HR staff approve the request, without resources such as HR specialists, AT specialists, or ancillary services, the employee needs to talk with the procurement department or IT staff to implement the request. For example, Chloe stated that,

Chloe: We [with another employee with disabilities] had to go through the computer people making recommendations...

If stakeholders have a good understanding of disability and accommodation, disabled employees will have successful accommodation experiences; otherwise, the accommodation process may not be as smooth because of bureaucracy, as shown in the participants' experiences.

Hebe: The person that I was dealing with for disability support was leaving. But before she left, she made sure that this request got processed. She was very diligent about it...

Chloe: As far as [the job title], when I first met her, I think she was a little bit hesitant, a little bit nervous, but once I get used to her, she was good. So when I asked for the accommodations later on, she was totally on board.

Christine: Whereas in the second [organization] there was a whole hierarchy. It had to be approved. It had to go up this chain of command and things were promised but got lost in the shuffle.

For the low-level IS use, since there is a lack of IS components, participants often did not directly speak in terms of system use but talked about their suggestions on IS use. They found an accommodation checklist, an information website, a special budget, and a single point of contact would be helpful.

Ivan: A checklist or a guidance list would be really good and one of the examples I've mentioned... I had no idea that there was a specific set... because it was kind of hidden. I had no idea of that until somebody told me.

Sophia: I think HR could be more educated about the accommodation process because even just looking at their websites, there's not much information on it...

Matt: I would magically increase our budget so that we had more to spend for everybody.

Matt: ... Let's give the people that are doing this [accommodation process] authority to do what they need to do and have less approvals and fewer steps to make it more efficient.

3.3 Accommodation Performance in Different Levels of IS Use

3.3.1 IS Effects of High-level IS Use

In the high-level IS use scenario (see Table 4), in terms of IS effects, disabled employees easily find accommodation-related information and follow through the process. They have sufficient economic, social, and cultural resources to support their process. Thereby employees usually get approved for whatever accommodations requested. They are also able to reach out to accommodation specialists at any time when needed. If employees are not sure about what they need for accommodations, the accommodation team can provide a needs evaluation. Moreover, specialists and employees are familiar with accommodations and processes to provide them. Considering the interview excerpts below:

Isabella: It [the accommodation process] is usually pretty smooth because they [HR specialists] basically send all the information to who they need to send it to and then they contact you to see when is a good time for us to set it up and they tell you hey, this is when it's going to be shipped. Here's your tracking number so you can see when it's going to come in.

Isabella: They [The organization] have their own budget for it [accommodation] because I saw the purchase order when they ordered my stuff and they didn't mean to send it to me, but they did. And it was like sixteen thousand dollars worth of equipment. I was like is this going to come out of my paycheck, and they were like no, we didn't actually mean to send that to you, but it's a separate budget just for all of that stuff.

Benjamin: I feel like a lot of most of the time all the time in my experience when something is requested, it's approved.

Isabella: I think the benefits are that you can really reach out to someone at any time that you need them.

Tiffany: One of the other things that [program] did is that if you wanted them to, they would do a needs assessment. They would talk to you about what your job is, what you have to do on the job, and they would help you find the right accommodations for the job.

Benjamin: We all work with [disabled] people. They are aware of what is needed and how to request for accommodation. They're not opposed to it, some people more vocal about it as opposed to others, but the [disabled] staff knows what they have to do, too...

However, high-level IS use can make the process less flexible, including an inflexible accommodation checklist and budget timeline. Additionally, some organizations may manage their accommodation information websites in a too general way rather than according to disability categories. The participants discussed these specific issues during the interviews:

Isabella: I think what would be helpful is if they had a process for requesting software or a thing to use from outside of the approved vendors list. Like hey, I want to get [add] this software on the approved vendors list. How do I do that? We have no idea as employees how we could do that so that would be nice to have my say.

Tiffany: Sometimes with [the program] we had to wait a while... If you would request something in [a particular month] or maybe when [the program] started running out of money or if there was a continuing resolution... Sometimes [the program] would not spend money if they were under one of those continuing resolutions... So I would say that bonds should be handled in such a way that you don't run out of money at the end of the year... so that everybody who requests accommodations has an equal opportunity to get those and get those timely.

Benjamin: I would probably break [the website] down by disability category so that it would be easy for someone to say okay, I have this disability, this is where I can go, this is the information that I can use for my own disability as opposed to have been generalized.

3.3.2 Low Emotional Tolls of High-level IS Use

Regarding emotional tolls, employees experience low emotional tolls and feel much more comfortable requesting accommodations because stakeholders make few judgments about what employees request for, as Isabella said, “you're generally not afraid to ask for something, to ask for what you need”.

Occasionally the insufficient communication between specialists and employees could happen, however, since supervisors do not pay for accommodations out of their departments, have formal requirements to accommodate employees, and “wouldn't have any reason to” object to providing accommodations, they often discuss with specialists and make sure that employees still get requested accommodations.

3.3.3 IS Effects of Low-level IS Use

In the low-level IS use scenario (see Table 5), regarding IS effects, it is more flexible to choose accommodations compared to an established accommodation checklist. The benefit of this is for some accommodations, disabled employees “couldn't have guessed” what accommodations they need “until they got there”. The negative IS effect is that without an HR specialist who is in charge of the whole

process, employees go through many stakeholders to get the accommodation process going. A participant talked about his experience with an accommodation process without a single point of contact:

Ivan: ...I went through of having to talk to six different people. With one person in charge of everything, it was a fairly smooth process. And you didn't have to deal with the accommodations person saying, yes, you need to do this and somebody else saying, no, you don't need that and then you get into a struggle like I had back in [a state] with [an accommodation].

3.3.4 Higher Emotional Tolls of Low-level IS Use

In the low-level IS use scenario, without enough support of economic, social, and cultural resources, and since a lack of knowledge of disability and accommodation by stakeholders is common, employees have less effective and satisfying accommodation experiences. Employees experience higher emotional tolls and may need to fight hard to justify their needs.

Emily: My boss theoretically knew that who is supposed to provide accommodations but didn't know the how or the what or even the steps to do it. And that was true down the line from my boss to HR to IT. They are all talking to each other being like we know we need to provide this accommodation, but how to actually do it we don't know. They never had to do it before.

Emily: This is one of the things that's so frustrating is like my boss doesn't know [how to get the accommodations]. I'm brand-new employee. I don't know what to do.

Daisy: [When asking for an accommodation] I would actually have it written out and schedule a meeting and just explained the particular accommodation that I needed, why was needed and... how long do you need it for, kind of things.

Chloe: I remember that when we [with another disabled employee] wanted to update [an accommodation], we had to go to human resources and explain, what was the purpose for it? What would it result in? What would be the advantages of updating? And then we had to kind of write a proposal for a while, how it would be a good idea to update the software, because it would work better with programs and it would really ultimately help me to work more efficiently.

Moreover, some participants pointed out that they experienced mental health issues due to the stresses within the accommodation process.

Sophia: I think it's stressful. I think some of the cost is like confidence type thing or like anxiety kind of. I know when I was disclosing my disability and asking for the [accommodation], I was really anxious about that just because of my past experience. I also think there's a lot of internal guilt involved. I think especially in [the state] asking for an accommodation made me feel bad. It made me feel guilty and made me feel worse about my disability or what I needed.

Sophia: I initially felt guilty because I was gonna miss the work, but then as I realized I needed it and with my [boss' title] reaction, it made that worse. I just hated it. I was afraid to ask for the [accommodation] because of her reaction.

To address the issues, employees may form a personal informal coping system, which positively mediates emotional tolls and helps improve accommodation performance. The personal informal coping system may include creating a tool kit of needed accommodations, requesting things that are low-cost, training others how to accommodate, choosing jobs carefully, and arriving at work earlier (see Table 6).

Furthermore, I recognize that positive career items positively mediate emotional tolls. Some participants have worked at job positions and organizations that support disabled people, which positively mediate the effects of low-level IS use on employees.

Henry: Good communication [with stakeholders] because everybody knew me as [a job title].

Matt: You are responsible for knowing your stuff. You have to be able to present and demonstrate why you should get a certain thing and people generally trust that, especially in my role that I know what I'm talking about.

Daisy: They [stakeholders] have experiences with people who are [disabled]... It's like you fit the same everything that they perceive and had experience with it.

Conversely, negative personal characteristics negatively mediate emotional tolls. For example, some participants may be afraid of requesting accommodations due to the worry about potential backlash.

Daisy: I think in hindsight I didn't ask for certain accommodations because I was in a challenging situation, if you ask for too many accommodations, it appears that you're not capable of doing the job. And so my whole focus was to do the job and show that I was capable and efficient as my peers that I can do the job...

4 Discussion

Based on the above analysis, the high-level IS use often results in a better accommodation performance than the low-level IS use. Nevertheless, several IS design limitations exist in the high-level IS use. First, IS design in the accommodation process with the high-level IS use often uses a specific, inflexible template. This practice mainly focuses on standardization and efficiency, serves the average users, and often ignores a spectrum of user needs [13,28-29]. A specific, inflexible template in the accommodation process contradicts the characteristic of accommodations as individualized services. The empirical findings confirm that such design including an inflexible accommodation checklist and budget timeline and too general accommodation information on organizations' websites negatively affect disabled employees' accommodation experiences and ability to acquire the necessary accommodations to make

them effective at their work. Second, the standardized IS design often disregards human elements in IS design and does not address the fundamental social issues in the current accommodation process. A major challenge in social inclusion practices (particularly, disability inclusion in the present study) is the awareness issue [3,30-31]. The empirical findings show that employers and organizational stakeholders are often not aware of disability and accommodation. A long-term and more effective solution should consider human elements to better fit with the social characteristics of the accommodation process.

The critical disability theory is a helpful lens to inform such IS design. First, the critical disability theory helps raise awareness of disability and accommodation by challenging the rationalism of ableism and addressing diverse opinions [32-36]. As discussed earlier, in the accommodation context, the current IS design does not pay attention to stakeholders' awareness and knowledge of disability. The empirical findings confirm that stakeholders do not always understand disability and accommodation and make little effort to proactively offer an effective accommodation process to employees. In addition, several study participants because of their personal characteristics such as personality and background were afraid of requesting accommodations due to internal guilty and the worry about potential backlash. Therefore, the critical disability theory informs an IS design that should provide intervention process support to increase disability and accommodation awareness. Intervention process support could be achieved in the forms of training, survey, and action plan [37]. Specifically, for relevant stakeholders, I suggest that IS such as intranets, which allow for the easy storage and quick dissemination of training materials (via videos and guides) as well as feedback mechanisms (surveys and certifications) provide an easy means of educating and engaging supervisors, HR, and coworkers on accommodation norms. Such materials provided by IS also help create and reinforce norms, procedures, and resources of the accommodation process. These materials can focus on how to create a more inclusive work environment, how to properly address disclosure and request, and how to develop a fair and equitable accommodation process that empowers disabled employees.

Second, the critical disability theory helps pay attention to individual needs of disabled employees [34].

Accommodation is essentially an individualized service because different people have various needs [38,39]. To accommodate different employees' needs and improve accommodation performance, an IS should provide individualized and flexible arrangements. For example, IS designers can organize accommodation process information according to disability categories. Furthermore, in the accommodation request forms, IS designers can build and provide accommodation checklists and also an open form for filling out special accommodations that are not on the checklists.

Third, the critical disability theory uncovers various human effects and emphasizes social interactions in the accommodation process [40]. Communication among stakeholders is a critical component in the accommodation process [41]. To emphasize immediate and adequate communications among individuals, an IS should provide communication support. One of the main reasons why the accommodation process involves extensive communications is that disabled employees and their supervisors and coworkers as well as the whole organization may have conflicting interests in accommodation decisions [42]. To address these social issues, an IS needs to have a feature of communication support, which includes aspects of an IS that support immediate, sufficient, and iterative communication as well as address varying perspectives among stakeholders when exploring accommodation options [43].

Fourth, the critical disability theory focuses on the broader social, economic, and political context as well as addresses structural inequality [33-34,44]. In the accommodation context, we need to consider unequal distributions of resources for providing accommodations inherent across different types of organizations so that we can ensure that the resources empower disabled employees. The empirical findings confirm that the organizations (typically government organizations from the empirical data) that have economic, social, and cultural resources to support accommodation processes and other organizations that do not have different forms of resources result in the inconsistency of IS use in accommodation processes. The unequal distribution of resources inherent across different types of organizations is reinforced over time and thus the structural inequality is widened [34], which limits disabled employees' job opportunities to certain types of organizations. It is crucial for disabled people to have equal access to all opportunities of

employment that are available to their non-disabled counterparts. Therefore, an IS should promote resources share to build an emancipatory environment and empower disabled employees. The IS design should be extended to various organizations and society as a whole. The accommodation efforts are not only organizations' responsibility but also society's duty. I encourage organizations to share resources through a network in order to successfully accommodate employees. Additionally, accommodation services offered by some government agencies have been helpful. I suggest more efforts to be invested in those services, aiming at a whole range of disabilities and different types of accommodations. Thus, disabled employees have a variety of choices to acquire the resources they need for supporting their accommodation requests from different channels.

5 Conclusion

This research examined different levels of IS use in the workplace accommodation process and their effects on accommodation performance. The high-level IS use often results in a better accommodation performance than the low-level IS use, including high efficiency, high effectiveness, and low emotional tolls. Nevertheless, the high-level IS use often uses a specific, inflexible template as well as disregards human elements in the accommodation process. This work, as a critical first step, provides implications that future IS design in the accommodation process should raise awareness of disability and accommodation, account for individual differences, involve multiple stakeholder inputs, as well as address the fundamental social issues in the accommodation process.

Ethical Approval

The Worcester Polytechnic Institute Institutional Review Board approved this research on July 28, 2020.

The approval number is FWA #00015204 – HHS #00007374.

Informed Consent

Investigator: Shiya Cao, Dr. Eleanor Loiacono

Contact Information: scao2@wpi.edu, eloiakon@wpi.edu

Title of Research Study: Exploring Information Systems within the Workplace Accommodation Process

Introduction

You are invited to participate in a research study focused on exploring the role of information systems within the workplace accommodation process. Before you agree, however, you must be fully informed about the purpose of the study, the procedures to be followed, and any benefits, risks or discomfort that you may experience as a result of your participation. This form presents information about the study so that you may make a fully informed decision regarding your participation.

Purpose of the study: The goal of this research is to understand accommodation processes in organizations and explore the role IS play in these processes.

Procedures to be followed: You are invited to participate in an initial interview and two follow-up interviews around six months and one year after the first one. The follow-up interviews allow the investigators to ask additional questions after they look over their notes. You can at any point decline to participate in the interviewing process.

You are asked to read, sign, and email this consent form back to the study investigators prior to your participation in an initial interview (done virtually if necessary).

At the beginning of the interview, the investigators will confirm that they have received the signed consent form. The investigators will also ask whether or not you give your specific consent to record the interview so that they can transcribe it to ensure accuracy of notetaking. The interview will be recorded only if you agree to do so. The investigators will ask whether or not you have any questions before they begin the interview.

The interview often takes about one hour. Participation is voluntary and you may end your participation at any time. The investigators will not disclose any personally identifying information about you. You can choose not to answer any question and the investigators will move on to the next question.

The questions the investigators will ask are as follows:

- The questions look at the accommodations you are familiar with. For example, what kinds of accommodation issues have occurred for you?
- The questions look at the accommodation process you are familiar with. For example, how do you request accommodations? Who do you request accommodations from? Could you walk me through the process?
- The questions look at IS within the accommodation process specifically. For example, what part of the accommodation process uses IS?

You will receive a \$10 gift card to Amazon if you finish the initial interview. At the end of the initial interview, the study investigators will verify your email so that they can send the gift card to you after this interview. The two follow-up interviews will not have payment.

All the data collected in this study will be kept confidential. The investigators will share a summary of this study's findings with you and with the scholarly community without identifiers to organizations or individuals.

Risks to study participants: There is no risk greater than experienced in everyday life to participate in this study.

Benefits to research participants and others: A summary of this study's findings will be shared with you. This study will offer companies with strategies of improving the accommodation process and using IS to facilitate the process. It may also help improve the work environments and performances for employees with disabilities and entire organizations as well as social morality.

Record keeping and confidentiality: The recorded interviews (only if you agree to do so) and transcripts will be stored on a secure, password protected computer. Records of your participation in this study will be held confidential so far as permitted by law. However, the study investigators and, under certain circumstances, the Worcester Polytechnic Institute Institutional Review Board (WPI IRB) will be able to inspect and have access to confidential data that identify you by name. Any publication or presentation of the data will not identify you.

Compensation or treatment in the event of injury: You do not give up any of your legal rights by signing this statement.

Cost/Payment: You will receive a \$10 gift card to Amazon if you finish the initial interview. At the end of the initial interview, the study investigators will verify your email so that they can send the gift card to you after this interview. The two follow-up interviews will not have payment.

For more information about this research, please contact Shiya Cao (scao2@wpi.edu), Dr. Eleanor Loiacono (eloiacon@wpi.edu). For questions regarding your rights as a research participant or in case of research-related injury, please contact the WPI IRB Manager (Ruth McKeogh, Tel. 508 831-6699, Email: irb@wpi.edu) and the Human Protection Administrator (Gabriel Johnson, Tel. 508-831-4989, Email: gjohnson@wpi.edu).

Your participation in this research is voluntary. Your refusal to participate will not result in any penalty to

you or any loss of benefits to which you may otherwise be entitled. You may decide to stop participating in the research at any time without penalty or loss of other benefits. The project investigators retain the right to cancel or postpone the experimental procedures at any time they see fit.

By signing below, you acknowledge that you have been informed about and consent to be a participant in the study described above. Make sure that your questions are answered to your satisfaction before signing. You are entitled to retain a copy of this consent agreement.

_____ Date: _____

Study Participant Signature

Study Participant Name (Please print)

_____ Date: _____

Signature of Person who explained this study

Conflict of Interest

The author has no conflict of interest to report.

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Appendix A

Interview Protocol

Organization: _____

Interviewee (Title and Name): _____

Introductory protocol: Thanks for taking the time to talk with me. The goal of this research is to look at workplace accommodation processes and the role of information systems (IS) play in these processes.

During the interview, I will focus on your experiences with accommodation processes, as well as ask you about IS used in these processes. You may not feel you can answer all questions related to IS, which is fine.

I have sent you the consent form. Do you have any questions before we begin?

If answer is “YES”, answer questions and then proceed to interview questions.

If answer is “NO”, proceed to interview questions.

Would you mind if I audio record this interview?

If answer is “NO”, confirm that you will not be recording the interview and continue with interview.

If answer is “YES” [I turn on the recording.] I just have to ask you again so we have it on the recording, would it be okay if I record this interview?

Organization type:

Industry:

Number of employees:

Headquarters location:

Background items for interviewee:

1. Please briefly describe your job and experiences with workplace accommodations.

[If answer is no] Go to Question #2

[Last job versus Current job] Could I ask when/how long was your last job? Do you mind sharing why you left your last job? Did you have workplace accommodation process experiences before this job? What were those experiences compared to the current experience? [career history]

[Accommodation Examples] Do you mind sharing what accommodations, if any, you need for your work?

[Unavailable Accommodations] What accommodations have you felt you needed to help you on the job that you have not asked for them? Why not?

[If answer is no to Question #1] 2. How do you look for jobs?

[Job Choice] What if any impact does the availability of accommodations or accessibility have on your job choice?

Accommodation process: These questions look at the accommodation process you are familiar with.

3. What was your disclosure experience?

[Disclosure Detail] Do you mind sharing how much and what kind of detail did you disclose at work? What impacted your decision?

[Disclosure Time] Did you disclose needs for accommodations during the employment interview process or after receiving your job offer? Why or why not?

[Disclosure Time] Have you discovered subsequent accommodation needs after accepting and working at a position? [If answer is yes] Have you requested those accommodations? Why or why not?

[Disclosure Improvement] What, if anything, would you change about this part of the process (i.e., improvements)?

4. When receiving accommodations, please walk me through the accommodation process in your organization. (Use an example from Q1)

[Steps] (a blank sheet of paper)

[Request Response] How did supervisors respond to your request? (positively, with concern, etc.) Examples.

[Request Denial] To what extent your accommodation requests have been denied? Why does your organization not want to do this? How did you adapt yourself to work without the accommodation?

[Request Approval Factors] Do you know the factors that impacted (facilitated and/or impeded) the approval of your requested accommodations? [If answer is yes] What were they?

[Request Improvement] What, if anything, would you change about this part of the process (i.e., improvements)?

[Gather Documentation] Did your organization gather documentation for approving accommodation requests? [If answer is yes] How did you collect such documentation?

[Negotiation] In what ways, if any, did the organization communicate to you after an accommodation request was made? What kinds of things might go into a response?

[Implementation-Delivery] What was the time from request to delivery to you? Do you think the response time was normal, fast, or slow? Why?

[Implementation] In what ways, if any, did the organization communicate to you when implementing accommodations? (How to install/use them?) What kinds of things might go into a response?

[Ongoing Support] In what ways, if any, did the organization communicate to you after an accommodation request was implemented? What kinds of things might go into a response?

Two possible causes: (1) Nature of disability changes or (2) Accommodation itself wears out/is old and needs to be upgraded.

[Ongoing Support-Disability Changes] Sometimes disabilities change and require new or different accommodations. Please describe your experiences with such changes.

[Ongoing Support-Outdated Accommodations] Sometimes accommodations become old or obsolete. Please describe your experiences with such changes.

[IS] What part of the accommodation process uses (what) computer systems (e.g., email, electronic form, message, video conference, intranet, database, or accessible products)? (a blank sheet of paper)

[IS-FEATURES-INFO] What are the features of IS? What information do you fill in/do those IS include? How do they sort data? Can you provide me an example? What, if anything, would you change about this part of IS (i.e., improvements)?

(When implementing accommodations) Are IS organized so that they adequately support different types of disabilities and accommodations? Can you provide me an example of how? What, if anything, would you change about this part of IS (i.e., improvements)?

[IS-FEATURES-COMM] What IS are used for communication among stakeholders? If I was a stakeholder, how would you request/communicate about accommodations to me? (IS-what would you write in an email; in-person)

(When implementing accommodations) How did stakeholders respond to you using different communications (IS, in-person)? Can you provide me an example?

What, if any, differences exist between IS and in-person communications? What were your interactions/experiences with people using those IS/in-person communication? Can you provide me an example? What, if anything, would you change about this part of IS (i.e., improvements)?

[IS-FEATURES-OTHER] What are other features of IS? What is missing in those IS that would be helpful to you?

[IS Changes-Computer Experience] What is your assessment of IS used in the accommodation process?

[IS Outcomes-Disclosure and Request] How does IS (accessible products) impact your decisions to disclose disabilities and request accommodations? Can you provide me an example of how? What, if anything, would you change about this part of IS (i.e., improvements)?

[IS Outcomes-Communication] How does IS impact your communication and collaboration with other stakeholders in the accommodation process? Can you provide me an example of how? What, if anything, would you change about this part of IS (i.e., improvements)?

[IS Outcomes-Quality of Accommodating] How does IS impact the quality of accommodating? Can you provide me an example of how? What, if anything, would you change about this part of IS (i.e., improvements)?

[IS Outcomes-Social Inclusion] How does IS used in the accommodation process impact reputation and moral of your organization? (more disabled applicants and retention, supervisors' and coworkers' attitudes) Can you provide me an example of how? What, if anything, would you change about this part of IS (i.e., improvements)?

[People] Who (stakeholders/departments) do you interact with during the process? (a blank sheet of paper)

[Role] What role did each person play?

[Colleagues/Coworkers] Did colleagues impact your decisions and thoughts about workplace accommodations? If so, how?

[Colleagues/Coworkers] Did colleagues give you help during the process? If so, how?

[People Experience/Interaction] What were your experiences with them?

[Greatest Influence] Who, if anyone, had the greatest influence on the outcome of your accommodation(s)? Why?

[General Culture] In general, how do people in your organization tend to help each other out?

[General Culture] How do people in your organization typically think about accommodations?

[Training] What kinds of trainings have you had related to the accommodation process at work? How were those trainings provided to you? Who conducted the training? How was your training experience?

5. What do you see as costs for making accommodations?

[Pay for Accommodations/Indirect Costs] Who incurs them?

Reflection questions for interviewee:

[Reflection-IS] What have been benefits and/or challenges about the use of IS? [If answer is challenge] How has your organization dealt with those challenges? [If answer is benefit] In what ways IS make the accommodation process better? How IS-FEATURES might address AP-CHALLENGES?

[Reflection-Accommodation Process] What have been the benefits and/or challenges about the use of your organizational accommodation process?

[When they say AP-BENEFITS] Why these are better?

[When they say AP-CHALLENGES] In what ways these issues impact the accommodation process? How IS-FEATURES might address AP-CHALLENGES?

[Reflection-People] What could a supervisor/HR do to make the process better overall or specifically for you?

Thank you so much for answering the questions so far. We're just about at the end. Is there anything else that you would like to add? Is there anything that you thought I should have asked about the accommodation process, but didn't? Is there anything you feel I missed or didn't give you a chance to respond?

This has been great. You have given me a lot to think about. Thanks so much for your valuable input. Do you mind if I contact you if I have any additional questions after I look over my notes? YES or NO Do you have any other suggestions about who else I should talk to next? Could you promote my research to your group?

Before you go, I just wanted to verify your email so I can send the gift card to you. Please give me a little time to send you the gift card. I might send out gift cards to a few interviewees together. I will let you know when I send it to you.

Again, thanks so much for your time!

Appendix B

fsQCA is an approach that uses fuzzy algebra to examine the causal relationship between different combinations of factors and an outcome [45]. In this research, the components of IS in the accommodation process, including computer system, special budget, specific role, ancillary service, formal policy and procedure, serve as the causal inputs, and the level of IS use serves as the outcome. fsQCA software version 3.1 is used to perform the analysis in this study [23].

Table B1 shows the values of IS components based on participants' descriptions and the predicted values of levels of IS use. If an IS component is used in a participant's organizational accommodation process, it is coded as 1; if a participant indicates the absence or negation of an IS component, it is coded as 0; if a participant indicates the ambiguous condition of an IS component, the cell is left blank. Then, based on the interaction effects of these IS components, three levels of IS use (high, low, and none) in various organizations are coded. If more than two IS components are used in an organizational accommodation process, the level of IS use is coded as 1 (high); if only two IS components are used in an organizational accommodation process and other IS components are absent, the level of IS use is coded as 0.5 (low); if none of these IS components are used in an organizational accommodation process, the level of IS use is coded as 0 (none). When running the fuzzy set analysis, the blank input variables and the 0.5 values of the outcome variable are recoded as 0.51 because it is challenging to analyze cases with exact 0.5 scores on a 0 to 1 scale based on the intersection principles of fuzzy sets [25,46].

Table B1

Variables of the IS Components and Levels of IS Use

Case ID	Case Name	ERF	AC	SB	HRS	ATS	AS	HRQ	FP	Level of IS Use
1	Isabella	1	1	1	1	1	1	1	1	1
2	Benjamin	1		1	1	1	1		1	1

3	Tiffany's previous organization	1	1	1	1	1	1	1	1	1
4	Grace	1		1	1		1		1	1
5	Jack	1		1	1	1	1		1	1
6	Judy	1		1	1	1	1		1	1
7	Lily	1		1	1	1	1		1	1
8	Alice's first organization	1	0	0	1	1		1	1	1
9	Eva	1	0	0	1	1	1	0	1	1
10	Richard	1	0	0	0	0	0	0	1	0.5
11	Hebe	1	0	0	0	0	0	0	1	0.5
12	Ivan	1	0	0	0	0	0	0	1	0.5
13	Sophia	1	0	0	0	0	0	0	1	0.5
14	Emily's current organization	1	0	0	0	0	0	0	1	0.5
15	Henry and Nathan	0	0	0	0	0	0	1	1	0.5
16	Matt	1	0	0	0	0	0	0	1	0.5
17	Chloe	1	0	0	0	0	0	0	1	0.5
18	Pamela	1	0	0	0	0	0	0	1	0.5
19	Rose	1	0	0	0	0	0	0	1	0.5
20	Daisy	1	0	0	0	0	0	0	1	0.5
21	Jillian	1	0	0	0	0	0	0	1	0.5
22	Luke	1	0	0	0	0	0	0	1	0.5
23	Christine's second organization	1	0	0	0	0	0	0	1	0.5
24	Zoe	0	0	0	0	0	0	0	0	0

25	Emily's previous organization	0	0	0	0	0	0	0	0	0
26	Kathy	0	0	0	0	0	0	0	0	0
27	Laura	0	0	0	0	0	0	0	0	0
28	Tiffany's current organization	0	0	0	0	0	0	0	0	0
29	Fiona	0	0	0	0	0	0	0	0	0
30	Grace's current organization	0	0	0	0	0	0	0	0	0
31	Christine's first organization	0	0	0	0	0	0	0	0	0
32	Amanda	0	0	0	0	0	0	0	0	0
33	Alice's second organization and Monica	0	0	0	0	0	0	0	0	0

Note. Abbreviations: ERF: Electronic Request Form; AC: Accommodation Checklist; SB: Special

Budget; HRS: HR Specialist; ATS: Assistive Technology Specialist; AS: Ancillary Service; HRQ: Hiring Requirement; FP: Formal Process.

Table 1

Description of the Participants

Summary					
Total: 36*					
Gender Male: 10 Female: 26					
Organization Type Governmental: 5 Educational: 11 Other non-profit: 14 For-profit: 9 Self-employed: 2					
Disability Type Vision: 20 Cognitive: 8 Hearing: 4 Mobility: 4					
Participants Information					
Pseudonym	Gender	Organization Type	Job Position	Tenure at an Organization (Year)	Disability Type
Isabella	Female	Governmental	Government staff	8	Vision
Benjamin	Male	Governmental	Government staff	11.5	Vision
Tiffany	Female	1. Governmental 2. For-profit	Attorney	1. 35 2. 2.5	Vision
Grace	Female	1. Non-profit 2. Non-profit	1. Service coordinator/trainer	1. 8 2. 1.5	Vision

			2. Consultant		
Jack	Male	Non-profit	Dispatcher	4	Vision
Judy	Female	Governmental	Case manager	11	Vision
Lily	Female	Educational	Part-time online teacher	3	Vision
Alice	Female	1. Governmental 2. Non-profit	Policy counselor	1. 1 2. 4.75	Cognitive
Eva	Female	Non-profit	Manager	5	Mobility
Richard	Male	For-profit	Manager	N/A**	Cognitive
Hebe	Female	Educational	Archivist	1	Cognitive
Ivan	Male	Educational	Adjunct professor	10.5	Mobility
Sophia	Female	Educational	Archivist	1	Mobility
Emily	Female	1. For-profit 2. Educational	1. Metadata specialist 2. Librarian	1. 0.5 2. 3	Cognitive
Henry	Male	Non-profit	IT specialist	16.5	Vision
Nathan	Male	Non-profit	IT support technician	13	Vision
Matt	Male	Non-profit	IT officer	4.5	Vision
Chloe	Female	For-profit	Customer service	6	Vision
Pamela	Female	Educational	Part-time assistant	1	Vision
Rose	Female	Educational	University staff	6	Hearing
Daisy	Female	Educational	Teacher	9	Vision
Jillian	Female	Non-profit	Development assistant	10	Vision
Luke	Male	Educational	Data analyst/technician	35	Vision

Christine	Female	1. For-profit 2. For-profit	Social worker	8	Vision
Zoe	Female	For-profit	Archives director	5	Hearing
Kathy	Female	Non-profit	Instructor	6	Cognitive
Laura	Female	Non-profit	IT specialist	0.5	Vision
Fiona	Female	Educational	Teacher	8	Vision
Amanda	Female	Non-profit	Training and technical assistance	7	Vision
Monica	Female	Non-profit	Policy counselor	6	Cognitive

* In the sample, four participants did not request accommodations to their organizations or other agencies; two participants were self-employed and did not request accommodations to any agencies; two pairs of participants worked at a same organization respectively; and five participants had worked at two organizations respectively. Therefore, 30 (36-4-2) individuals who requested accommodations and 33 (36-4-2-2+5) organizations these 30 individuals had worked at respectively were analyzed in this study.

** This was the first interview and did not collect this data.

Table 2

Coding Examples

Interview Texts	<u>Open (underlined)</u> and <i>Axial (italic) Codes</i>	Selective Codes Developing Theoretical Themes
<i>Isabella</i> : It [the accommodation process] is usually pretty smooth because they [HR specialists] basically send all the information to who they need to send it to and then they contact	<u>Smooth process</u> <i>Full access-Outcome</i>	Comparing this passage to other interviewees' passages, themes about positive IS effects of the high-level IS use emerged, specifically, easily finding accommodation-related information and following through the process.

you to see when is a good time for us to set it up...		
<i>Benjamin:</i> I would probably break [the website] down by disability category so that it would be easy for someone to say okay... this is the information that I can use for my own disability as opposed to have been generalized.	<u>Website-Change</u> the <u>disability category</u> <i>Full access-Cons</i>	Comparing this passage to other interviewees' passages, themes about negative IS effects of the high-level IS use emerged, specifically, may be difficult to find accommodation information according to disability categories on an information website.
<i>Chloe:</i> I remember that when we [with another disabled employee] wanted to update [an accommodation], we had to go to human resources and explain, what was the purpose for it? What would it result in? What would be the advantages of updating? And then we had to kind of write a proposal for a while, how it would be a good idea to update the software, because it would work better with programs and it would really ultimately help me to work more efficiently.	<u>Formal process</u> <i>Partial access-Disadvantages</i>	Comparing this passage to other interviewees' passages, themes about higher emotional tolls of the low-level IS use emerged, specifically, employees may need to fight hard to justify their needs.
<i>Hebe:</i> ...I don't like to say I need it [accommodation] to	<u>Cost of accommodations</u> <i>Partial access-Not</i>	Comparing this passage to other interviewees' passages, themes about

people because it's so expensive... I tried to do it as easy as possible to get the least the laptop that will let me be productive.	<i>expecting organizations to spend money</i>	personal coping systems positively mediating emotional tolls of the low-level IS use emerged, specifically, requesting things that are low-cost.
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Table 3

Different Levels of IS Use in the Accommodation Process

Levels of IS Use	Computer System		Special Budget	Specific Role		Ancillary Service	Formal Policy & Procedure		Frequency	Consistency	Coverage	
	Electronic Request Form	Accommodation Checklist		HR Specialist	Assistive Technology Specialist		Hiring Requirement	Formal Process			Raw	Unique
High-level IS Use	√	O	O	√	O	O	O	√	9	1.00	0.56	0.56
Low-level IS Use	√	X	X	X	X	X	X	√	14	1.00	0.99	0.99
No IS Use	X	X	X	X	X	X	X	X	10	1.00	0.99	0.99

Note. √ indicates organizations have access to this category.
O indicates organizations may have access to this category or this category is not applied to the organizations.
X indicates organizations do not have access to this category.
Frequency threshold=1, consistency threshold=0.70.

Table 4

Positive and Negative IS Effects and Low Emotional Tolls of High-level IS Use in the Accommodation Process

High-level IS Use	Positive Effects	Negative Effects
IS Effects	<ul style="list-style-type: none"> ● Easily find accommodation-related information and follow through the process ● Usually get approved for whatever accommodations requested ● Be able to reach out to accommodation specialists at any time when needed ● Specialists and employees are familiar with accommodations and processes to provide them 	<ul style="list-style-type: none"> ● Often cannot request accommodations that are not on a pre-approved accommodation checklist ● Have to wait a certain amount of time if the request is submitted towards the end of a budget year ● May be difficult to find accommodation information according to disability categories on an information website
Low Emotional Tolls	<ul style="list-style-type: none"> ● Employees feel much more comfortable requesting accommodations 	-

Table 5

Positive and Negative IS Effects and Higher Emotional Tolls of Low-level IS Use in the Accommodation Process

Low-level IS Use	Positive Effects	Negative Effects
IS Effects	<ul style="list-style-type: none"> ● Choose accommodations in a flexible way 	<ul style="list-style-type: none"> ● Employees go through many stakeholders to get the accommodation process going
Higher Emotional Tolls	<ul style="list-style-type: none"> ● Personal informal coping systems positively mediate emotional tolls ● Positive career items positively mediate emotional tolls 	<ul style="list-style-type: none"> ● Employees may need to fight hard to justify their needs ● Employees may experience mental health issues ● Negative personal characteristics negatively mediate emotional tolls

Table 6

Personal Informal Coping System

Coping Methods	Evidence from the Interview Data
Creating a tool kit of needed accommodations	<p>Hebe: ...Like I said, I used my iPad. I was working in different applications on my iPad. I was taking notes and I ended up transferring the document out of a notability and put it into Pages which then transferred into Office to Word. I use Numbers for my spreadsheet which is transferred into the numbers. I like Numbers better than Excel because they have a spell checker that checks while you're typing. You can see if it's wrong, so I do everything in Numbers, but I export it for my</p>

	boss and my supervisor. I always export that because they're on Windows into Excel...
Requesting things that are low-cost	Hebe: ...I don't like to say I need it [accommodation] to people because it's so expensive... Someone's giving you an almost two-thousand-dollar computer and now you're asking for a little over a thousand-dollar piece of software. I tried to do it as easy as possible to get the least the laptop that will let me be productive.
Training others how to accommodate	Emily: Often times I have to coach them through the [accommodation] process, even though I'm a brand-new employee, I barely know the workplace or station or stuff. But I have to tell them like, okay I have this disability, this is why I'm telling you I need this workplace accommodation.
Choosing jobs carefully	Ivan: I went into [this job]. I would say there are two reasons. One is the idea of the vocation. That's what I'm good at. That's what I like to do. The other is that since most [employers] are under some kind of federal mandate to be accessible. I would be able to do that without a hassle. That wasn't completely true but by large it has been okay...
Arriving at work earlier	Ivan: I always arrived early to make sure everything was still there and working. I always allowed a lot of time in between.

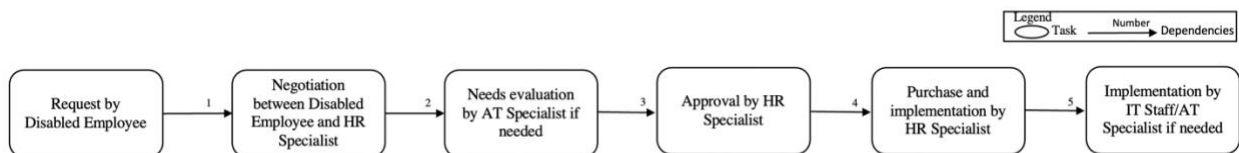


Figure 1

High-level IS Use in the Accommodation Process

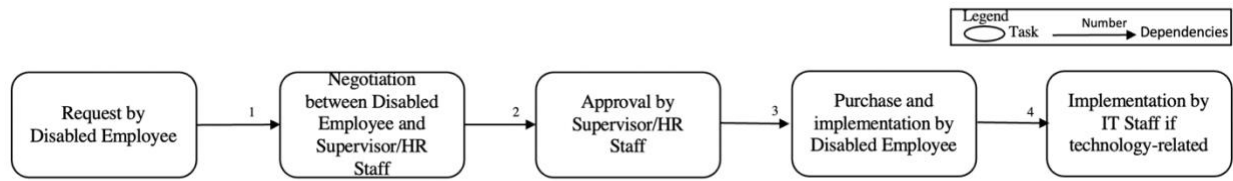


Figure 2

Low-level IS Use in the Accommodation Process