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The Future of Work: Identifying Future-ready Capabilities for the Industrial Distribution Workforce

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Abstract: Emerging technological developments such as autonomous robots, the Industrial Internet of Things (IoT), and cobots raise major challenges in labor markets and for policymakers responsible for promoting the necessary skills and employment. It is imperative to better understand and track these trends in the labor market and the future of work (FOW) so that strategies to inform, prepare for, and respond to changes in the industrial distribution workplace can be developed. The purposes of this study were to (1) explore managers' and workers' perceptions of the FOW technologies within current workplace practices, and (2) to identify some skills future employees should possess in the industrial distribution industry. This work adopted a grounded theory research study and the convenience sampling method was used to collect data. Qualtrics was employed to distribute a survey with open-ended questions. A total of 13 employees in the warehousing and industrial distribution industry participated in this study. Five specific themes were extracted, including lack of support at both company and society levels, employees' preparedness for the FOW, motivation to learn, perceived technological changes, and skills to gain. This paper provided preliminary findings of how these groups view work and training evolving in the next several years due to Industry 4.0 technologies.

Keywords: Future of Work, Industry 4, Industrial distribution, Workforce, Skills

Introduction

The future of work (FOW) has attracted immense attention during recent years [1]. However, there is no commonly accepted vision defining this term [2]. What is more, there is no agreement on how developing technologies might impact various industries. Most people associate the FOW with a rapid and transformative change in technology such as artificial intelligence (AI) replacing human jobs [3, 4]. However, FOW extends far beyond the single notion of AI [5]. Underlying this concept also includes social-economic or political factors [6]. A wide array of forces influence the nature of the future work, including technological advances (eg, automation, artificial intelligence robotics, Internet of Things, big data, blockchain), shifts in demographics, the broadening workforce, connectivity, globalization, empowered consumers, and the changing mode of work due to COVID 19 [7]. Undoubtedly, these trends jointly render the future work to be redesigned in order to operate optimally to increase the value and meaning for all stakeholders. In this sense, the FOW can be defined to incorporate the technological, social/demographic (well-being), and economic and political/institutional dimensions [5].

Now that we are on the threshold of the new production revolution, technologies such as autonomous robots, the Industrial Internet of Things (IIoT), cobots, hands-free wearables, data analytics are bringing widespread automation and irreversible shifts in the structure of jobs [8]. Several reports in the past five years have indicated that major labor gaps are bound to occur due

to the automation of production, artificial intelligence, wearable technologies, big data analytics, people analytics, and so forth [9]. With these innovative technologies, new language emerged to describe these accelerations, such as 'Industry 4.0,' the 'Fourth Industrial Revolution,' and the 'new collar workforce' [10-12]. These accelerated changes will undeniably change what it means to be a worker in the 21st century, and also hold many implications for the education, training, and development of the workforce. The Association for Talent Development (ATD) recently surveyed over 400 business leaders and managers about what needs they foresee for the labor force in the next five to ten years [9]. Many of these predictions are relevant to the workforce in a very broad sense, but what we are specifically interested in is what these accelerating changes will mean for employees and management in the industrial distribution sector.

The industrial distribution industry moves goods and service from material producers to end-product customers [13]. This industry plays an important role in the economy because companies in industrial distribution are primarily engaged in the distribution and supply of industrial equipment. However, the industrial distribution workforce is not immune to these technological, social, demographic, economic changes. Warehouses are the heart of a company's operations – be it manufacturing, wholesale, or retail. Adoption of emerging technologies and adaption to new social and economic changes are likely to contribute to greater productivity and create enormous economic benefits in warehouses. However, these emerging trends raise major challenges in labor markets and for policymakers responsible for promoting the necessary skills and employment. Emerging evidence in the past five years has indicated that major labor gaps are bound to occur due to new technologies [14]. Therefore, it is imperative to better understand and track these trends in the labor market and the future of work (FOW) so that strategies to inform, prepare for, and respond to changes in the industrial distribution workplace can be developed.

This paper will explore the expectations and experience of managers and workers in the warehousing and industrial distribution sectors, and will provide preliminary findings of how these groups view work and training evolving in the next several years due to Industry 4.0 technologies. Doing so will help us to better understand what the employees perceive as their experience with new technology, and therefore to unravel the skills gap current employees need to close to embrace the FOW. The purposes of this study are to (1) explore managers' and workers' perceptions of the FOW technologies within current workplace practices, and (2) to identify some skills future employees should possess in the industrial distribution industry.

Literature Review

Future of work represents one of the most challenging themes for the workforce development across various industries. Technological advancements are leading to the introduction of novel business opportunities and models, such as the use of novel service-based and real-time enabled Cyber-Physical Systems (CPS) [15]. These new technologies play a fundamental role in shaping an emerging market, economic system and social infrastructure for workplaces [16]. For example, digital value chains and automation bring about a thriving marketplace, but may also generate cyber-attacks and manipulations, raising cyber-security issues. Moreover, as the future of work is creating a shift to new organizational structures and workers' roles, workforce development should be centered because human resources are the leading component for this revolutionary change [17]. Worker selection and continuous skill development are therefore becoming essential functions for industries to conduct workplace design, equipment

maintenance, process improvement, mistake proofing, and process reconfiguration for new products [18]. This section will review the literature focusing on examining the challenges the current workforce faces and competencies needed to reach business success in the face of FOW. Given that little research has been conducted on the topic of future-ready capabilities for the Industrial Distribution workforce, this section will focus on broad facets of FOW.

FOW requires more flexible, adaptable, and efficient networks, changing the workforce interactions [19]. It also impacts employees' activities in the workplace, rendering them to be more coordinated, creative, and strategic [17]. As low-skill jobs decrease and high-skill activities increase, growing complexity will be the norm in many job profiles, resulting in cross-functional and cross company partner networks. To be more coordinated and creative, employees' continuous learning, training, and education will be emphasized in order for the workforce to be able to adapt to future qualification requirements [20]. Also, functions such as quality and maintenance will be automated and working life will gain more flexibility and importance [17].

In the workplace, McClelland and Boyatzis [21] define competency as a collection of knowledge, motives, traits, self-images, social roles, and skills that are causally related to job performance. Focusing on exploring the managerial competencies of future managers, Grzybowska and Łupicka [22] grouped three main categories in managerial competencies for the FOW. The first is technical competencies which include job-related knowledge and skills such as media skills, coding skills, knowledge management, and statistical command. The second managerial competencies consist of conceptual skills and abilities. Future of work provides new challenges in the workplace; however, managers in the face of new technology still need to solve problems and conflict, negotiate, and to make decisions, therefore it is important for them to possess analytical skills, problem solving, and creativity. The last category of managerial competency relates to social aspects. Social competencies comprise the ability to facilitate learning, leading people, and building a conducive working environment. Of course, social communication and interpersonal relationship are indeed important to future managers. Based on their competency analysis, Grzybowska and Łupicka [22] identified eight core abilities that are of significance in a digitized environment within industries. There eight competencies are creativity, entrepreneurial thinking, problem solving, conflict solving, decision making, analytical skills, research skills, and efficiency orientation. Although these authors claimed that they surveyed high qualified managers in transnational Automotive and Pharmaceutical companies, it appears that their final categories of competencies are still based on traditional skill model proposed by Katz [23] with attention paid to new technology.

From the perspective of employees, Hecklau, et al. [24] conducted a systematic review and examined the impact of future technologies and ongoing digitization on the employees' competencies. Extracting main themes from 12 studies on Industry 4.0, these authors identified a total of 13 competences that can be clustered into four groups: personal, social, methodological, and domain-related competences. Social competence includes communication and cooperation skills, leadership skills, and analytical skills. Methodological competence consists of complex problem solving skills, decision making skills, and creativity [25]. For the personal competency category, it comprises willingness to learn, and flexibility and adaptability. The most distinctive part is domain competence which concludes digital networks, digital security, coding skill, process understanding, and interdisciplinary competence. This employee competence category specifically emphasizes the importance of domain skills. For example, the FOW requires

employees to have multiple competence sets and knowledge and to perform tasks out of their own professions [25].

The above digital skills are essential for the future workforce to master because they enable workers to operate, search, process and apply data in a digital environment [26]. Considering the importance of digital skills, Vuorikari, et al. [27] developed an inclusive framework incorporating cognitive, social, and technical competences. They categorized the competencies into five groups: information and data literacy, communication and collaboration, digital content creation, safety, and problem solving. Each competency includes digital skills or tasks that need digital skills to fulfil. For example, under the category of "Communication and collaboration" are "Interacting through digital technologies", "Netiquette", "Managing digital identity", and others. "Problem solving" category includes "Identifying needs and technological responses", "Identifying digital competence gaps", and other activities using digital technologies.

Although researchers presented their own models for what competencies are needed for workers to successfully perform tasks for FOW, these competencies appear scattered and not cohesive. Attempting to cover workforce competencies as a whole, Flores, et al. [17] more recently provide a particular set of comprehensive and inclusive competencies to ponder in the Industry 4.0 era. They name their model the Typology-competence set for Human Capital 4.0 that covers soft work competence, hard work competence, cognitive workforce competence, emotional intelligent workforce competence, and digital workforce competence. Soft workforce competence incudes flexible and social skills and multicultural collaboration dexterity is emphasized as relevant in the future multicultural workplaces [28]. This competency category entails the social competence proposed by Hecklau, et al. [24] and also includes communication, cooperation, and teamwork. Hard workforce competence consists of professional and dexterous skills, covering industrial organization, processes, design with technology, digital security, and coding and programming. While cognitive workforce competence contains intelligence and analytical skills, the emotional intelligence; workforce competency comprises self-aware and empathetic skills. As the future workplace may be replete with stress and fatigue due to human-robot interaction, emotional competency is essential for the future workforce to tackle the workload and anxiety resulting from dull and monotonous work environments [29]. The last competence is digital workforce competence which includes digital literate and digital interactive skills. These skills are the most wanted for the future workforce as FOW requires knowledge of programing, cybersecurity, digital networks, cloud computing, database, web development [17].

From the literature, future-ready capabilities in the workforce were generally identified in various industries. However, it appears that the topic of competencies for the industrial distribution workforce facing new technology has not received much attention among scholars and practitioners [30]. It remains unclear how employees' perceive the FOW technologies in the industrial distribution industry. The next section will describe a preliminary study to explore managers' and workers' perceptions of the FOW technologies and to identify competencies future employees should possess in the industrial distribution industry.

Methodology

Research approach

This study is exploratory in nature. It explored the experience of workers in the warehousing and industrial distribution sectors, and ultimately this paper provided preliminary findings of how

workers view their work and training evolving in the next few years due to Industry 4.0 technologies. This work adopted a grounded theory research study and the convenience sampling method was used to collect data. We employed Qualtrics to distribute a survey with open-ended questions.

Participants and procedure

The participants of this study were students of one of the authors (Course No. IDIS 651) at a large research university in the USA. There were 56 students enrolled in this class. Shortly after the IRB was approved, we sent an invitation email to the students asking them to participate and distributed the survey on October 25, 2020. A week after the initial distribution, we sent a reminder email to them considering only a small number of students participating. The survey was kept open until November 27th, 2020. The participation in the interviews was entirely voluntary. A total of 29 students participated in this study with a response rate of 51.8%. However, 16 of them only filled in their demographic information and did not provide answers to the questions. Only 13 participants fully completed the survey. Therefore, the valid response rate was 23.2%.

Of 13 participants, 10 are male while only 3 are female students. Their age ranged from 20-59. Most of them were in their 40s (n = 7). There were 8 students working in the manufacturing industry. In terms of company size, 9 participants worked in companies with more than 1000 workers. While 7 students were managers in their organizations, 2 were vice presidents. Only one participant worked at the entry-level. They varied in their experience ranging from less than 5 years to 16 years.

Instrument

The survey consisted of two sections. The first section was related to demographic information. The second section of the survey provided 17 open-ended questions relating to major concerns facing employers and workers in terms of cultivating future-ready capabilities in the FOW labor market. The first 8 questions were for all the participants to answer. For example, a sample question includes “What kinds of training and education are available to employees to help adapt to these new technologies and changes?”. The rest of the 9 questions were for those who have additional responsibilities of managing people in their organizations. A sample question is “What technological changes concern you the most with respect to preparing employees for changing demands of work?”. The survey required approximately 60 minutes to complete.

Data analysis

For the data analysis, the guidelines of Strauss and Corbin [31] were followed, and open coding, axial coding, and selective coding were used to extract the main themes that constitute workers’ perceptions of the influence of FOW technologies, as well as some skills future employees should possess in the warehousing and industrial distribution industry. The data were analyzed utilizing both thematic analysis and content analysis.

Results

The results of this study provide preliminary findings of how workers view their work and training evolving in the new few years due to Industry 4.0 technologies. A total of 13 participants responded to all the questions. While their answers included some skill sets needed for the

participants and their companies, respondents also shared their thoughts about the challenges and perceptions of the influence of FOW technologies in the warehousing and industrial distribution sectors. After closely examining the responses, five specific themes emerged including lack of support at both company and society levels, employees' preparedness for the FOW, motivation to learn, perceived technological changes, and skills to gain.

Lack of perceived support at both company and society levels

It is not technology that is the obstacle to the FOW, but people [32]. Therefore, it is critical to win the hearts and minds of employees and ease their anxieties and worries in the companies to succeed to implement new technologies in the workplace [33]. Leadership, organization, and even the whole society should make efforts to provide a large number of resources to support the employees. These may include proper information, encouragement, technology training programs, organizational counseling, or professional development. However, participants in this study felt that they did not receive much support from their companies and the society.

First, there are few training and educational opportunities available to employees that help them adapt to these new technologies and changes. A lot of respondents frankly expressed their complaints about training and education availabilities within their companies concerning technological advancement. When asked "What kinds of training and education are available to employees to help adapt to these new technologies and changes?", four respondents replied that there are only limited training programs in their companies, and they did not receive any systematic training on new technology. Realizing the urgency to receive training, one senior manager in a large manufacturing company responded that "Very little training is pushed, but a request for training is addressed in a timely fashion". They did not see much chance to access to effective education programs outside their companies as "…even technical college courses are outdated too". Although it cannot be inferred that social support is lacking, at least courses at educational institutions need to be revamped to keep up with the requirement of the FOW. Similarly, in response to "Are training opportunities available to employees to learn new technologies and skills related to FOW (e.g., IoT, big data, automation)?", 10 participants answered "No" while two responded with "somewhat". One employee admitted there are such opportunities available; however, "the focus and support from direct managers could be improved".

Second, leadership development opportunities are perceived to be limited. To address future trends and challenges, organizations cannot merely rely on their employees to update their skills. New technology and the rapid pace of change also entail organization leaders to learn to adapt their own skills and mindsets. However, although prepared, leadership perceives that external professional development programs available to them are limited which may support them in preparing for shifts in the Future of Work (FOW). In addition, most leaders in the organizations rarely consulted with outside experts regarding upcoming changes and demands in the workforce. In the survey. Only five participating leaders responded that they have consulted outside technology experts concerning the FOW while 4 leaders said they have more or less available to external professional development helping them to prepare for the upcoming change. One manager in a manufacturing company implicitly expressed his concern by answering: "We need to do a better job of getting value from the outside groups and not just running with the lowest bid. There were some systems installed 5 years ago that have yet to bear fruit, and now the company is revisiting the platform to gain the originally intended utility". Even though the

new technology was there for a long time, employees' skills fell behind. A vice president in an industrial distribution company responded that "I believe my company would be open to this and allow senior-level leaders to attend these events, but we rarely find them and offer them for the employees".

Employees' preparedness for the FOW

While most companies fail to provide the necessary support to their employees in terms of technology training opportunities and external professional development, employees as individuals in these companies still have hope, are willing to embrace the new technology, and feel confident in their adaptability. Despite a sense of job insecurity, employees have to face the rapid shift in work the future technology brings about. In response to the survey question "Do you think you can adapt to these changes?", 12 respondents gave positive answers whereas only one employee selected to give no definitive response. As for what they need to stay relevant as these changes are made, their answers varied. Quite a few employees emphasized the importance of lifelong learning. One participant put it this way, "I believe continuing education is key for management to stay relevant and adapt. If they can learn and pass that information to the team, I believe that would allow the improvement and help the team stay relevant on technologies". Another participant responded that "Adaptation to technological changes includes learning the technology and being able to utilize the technology for multiple functions". Others focused on the customer ("We feel our key is to continue to listen to and stay engaged with the customer") and their career ladder ("I feel like I am able to adapt to anything that I see as a positive to my career. Offering resources that allow for growth should be the main focus."). The vast majority of the respondents seemed to understand the need to push themselves to learn and develop themselves for any challenge that lays ahead. Indeed, it is essential for them to adapt to and keep abreast of technological advances.

Motivation to learn

The data analysis showed that almost all participants were motivated to expand their knowledge and skills with respect to new technology. However, what motivates them to learn tended to vary. While four employees admitted that financial benefits would incentivize them to learn new technology, there are a few who saw knowledge acquirement and skill advancement as major motivators to take a three hour per week class on their own time for 14 weeks. One employee remarked this way: "If the class provided means for me to advance my skill set to move further in my career, it would be beneficial". One manager mentioned applying what can be learned in class to work as his motivation, whereas another manager in a large industrial distributor said that she would go to training class because of some kind of certification or acknowledgement that she could put on my resume/LinkedIn profile.

Most leaders in the companies also thought that their employees are motivated to learn. However, when asked as leaders what they think would motivate their workforce to develop their skills, 9 of them responded pay raise is the primary reason for their employees to take technology-related training courses. Only one entry-level female manager provided another possibility: "potential risk of job elimination". It seems that a discrepancy existed between employees and organizational leadership in terms of the perceived motivation of employees to learn new skills.

Perceived technological changes

All participants were aware of the new technology such as autonomous robots, the Industrial Internet of Things (IoT), cobots, hands-free wearables, data analytics, as well as the impact of technologies on the structure of jobs. The words the respondents mentioned included "automation", "efficiency", "digital tools", "digitization", and "big data" in the warehousing and industrial distribution sectors. Some also noticed the trends of the jobs in logistics and warehousing. One commented that "Movement from specialist focusing on logistics to generalist focusing on a wide array of initiatives from sales and operations planning (forecasting) to new business development while keeping up with primary duties involving logistics and warehousing".

As for what a regular workday in this industry will look like in 5-10 years, it is clear that participants will go through a shift to remote work and digital avenues that will take the place of face to face interactions. They agreed that "more remote work and more automated robots and other forms of automation take the lead". "Software becomes the driving engine in how our customers complete their work". In addition to the time schedule, other changes might include "…larger work/life balance. In addition, much of the work will be less human-driven and more automation". It is very interesting to note that one vice president of an industrial distributor proudly responded that his company is ahead of our industry currently. "We automate as many tasks as possible so I believe the industry will catch up with that". One entry-level worker even lamented that technology change so fast and the job will be so automated that "I don't think my position will last into the next decade". Other participants held the same sentiment. They worried that automation will eliminate many jobs, but "people will not have the education to move to advance". Therefore, they "spent most if not all of their career trying to learn an outdated job position". Furthermore, there is "a lack of IT structure and absence of subject matter expertise" in the warehousing and industrial distribution sectors.

Skills to gain

In the survey, no specific questions were provided to ask employees explicitly what skills they need to obtain to adapt to technological advancement nowadays. However, most of the survey questions were skill-related. It was expected that the employees and managers would offer insightful comments on what skills are required for them to advance their careers. From their responses to the survey questions, we can see what skills they have to gain in the face of new technology. Three skills participants often talked about are the ability to learn, leadership skills, and adaptability.

Ability to learn

Workplace learning is critical for employees to possess the essential skills for present and future employment and development of the companies. Learning promotes skills of collaboration and problem solving, making and designing, empathy, and emotional acuity, enabling both employees and companies to adapt and thrive [34]. In the survey, almost all participants emphasized the importance of workplace training. A manager in a median-sized industrial distribution company remarked that "In this industry, you need to ask questions and constantly seek to learn. Do not become stagnant, avoid complacency in your personal work goals and your companies' goals". A young associate analyst even went further and recommended the new employees to learn the different technologies to help drive business functions through a mentor. A vice president used their recent roll-out of a new phone as a metaphor to encourage his

employees to learn as much as possible and integrate new technologies into all aspects of our operations.

Leadership skills

Given the nature of future work, warehousing and industrial distribution sectors must be adaptive and responsive to be able to survive [35]. This means companies in the industrial distribution industry must respond to wide ranges of quantities demanded, meet short lead times, handle a large variety of products, build highly innovative products, and meet a very high service level to increase their efficiency [36]. Leadership plays a huge role in helping the company to deal with these disruptive changes and promote adaptability and responsiveness. Participants in this study, especially those in the leadership position, realized the essential role leaders play in the transition to new technology. One senior manager said that strong leadership is needed in his company to create a new "structure, order, and discipline through a well-advertised vision". Another manager put it another way as he said that his leadership/management abilities need to be enhanced through a clear path in order to "obtain the knowledge or the knowledge improvement". Therefore, more managers in the companies can adapt and "would like to see more leadership and six sigma type training".

Adaptability skills

Technological advancement has impacted the warehousing and industrial distribution industry, creating an ever faster pace of change. Employees in this industry are required to learn and comprehend new technology with confidence and without fear. Being adaptable in technological environments is a highly prized skill in the warehousing and industrial distribution workplace. From the survey, it can be derived that most employees and leaders in the warehousing and industrial distribution companies realized the importance of flexibility and adaptability to the technology, change, and new environment. Out of 13 participants, 9 mentioned that they are willing to stay relevant, keep learning, and adapt to technological change. One large manager even said, "I feel like I am able to adapt to anything that I see as a positive to my career. Offering resources that allow for growth should be the main focus".

Discussion and Conclusion

In our study, a total of 13 student participants in the warehousing and industrial distribution industry responded to the survey. Twelve of them were in management positions. The aim of this study was to explore managers' and workers' perceptions of the FOW technologies within current workplace practices. Also, this study attempted to identify some skills future employees should possess in the warehousing and industrial distribution industry. We extracted five specific themes, including lack of support at both company and society levels, employees' preparedness for the FOW, motivation to learn, perceived technological changes, and skills to gain. This paper provided preliminary findings of how these groups view work and training evolving in the next several years due to Industry 4.0 technologies.

Study results showed that most of the respondents were prepared for the FOW challenges. They were confident about their adaptability and ready to embrace the new technology. However, respondents felt that the warehousing and industrial distribution companies did not provide enough training and education opportunities to help them adapt to these new technologies and changes. Also, they did not see many education programs outside of their companies. Most

courses in higher education institutions were perceived to be outdated and could not meet companies' future technology requirements. Furthermore, most companies rarely consulted with outside experts or invited them to train employees regarding upcoming technological changes to meet the demands in the future workforce. It appears that employees and managers in the industry do not quite understand the functioning of higher education institutions. There may be a silo effect between these two social entities, resulting in some miscommunication problems [37]. As noted previously, some courses may not keep abreast of the technological advancements due to the rapid development of technology. Nevertheless, among thousands of higher education institutions and training organizations such as universities, community colleges, and workforce education centers in the US, a multitude of them indeed provide state-of-the-art courses in new technology. For example, the Workforce Education Course Manual (WECM) Advisory Committee of Texas, USA recommended a variety of courses across different industries for workforce education (Website: http://board.thecb.state.tx.us/apps/WorkforceEd/wecm/). However, this miscommunication phenomenon may alert us that an effective communication channel should be established between educational institutions and the warehousing and industrial distribution industry [38]. It is essential to reduce the distance between academics and industry to provide interactive discussions to tackle this issue. This way, educational institutions and industries may work together to develop flexible and dynamic courses to adapt their curricula to technological changes.

It was also revealed that while employees and managers were motivated to expand their knowledge and skills concerning new technology to a great degree, it was financial benefits such as pay and promotion that motivate them to learn new technology. This may have significant implications for practice. In addition to triggering employees' internal motives to learn, the warehousing and industrial distribution companies might need to provide incentives to employees to encourage them to upgrade their skill set. Further, given there is a discrepancy between employees and organizational leadership concerning the employees' motivation, communication and cooperation should be consolidated between management and employees to reach a consensus.

There are several limitations to this study. First, the primary purpose of this study is to explore managers' and workers' perceptions of the FOW technologies within current workplace practices in the warehousing and industrial distribution industry. We also expected to identify some skills future employees should possess in this industry. However, this study did not yield much information about skill set gaps. We only extracted three professional workforce skills: the ability to learn, leadership skills, and adaptability skills. And we failed to see other professional skills such as communication, cooperation, and teamwork. Also, hard workforce competencies are missing, such as the design with technology, digital security, and coding and programming, which are most important in the warehousing and industrial distribution industry. As we articulated prior, this is only a preliminary study with its purpose of providing findings of how these groups view work and training evolving in the next several years due to Industry 4.0 technologies. In the next step, we expect to conduct interviews with employees and managers regarding what skills are needed to meet the needs of companies in the new era. Another limitation concerns the sampling strategy. In this preliminary study, we used the convenience sampling method and employed Qualtrics to distribute a survey to our students working in warehousing and industrial distribution companies. A total of 13 participating students provided valid data. However, we only had one employee who completed the survey; the results might be

biased due to 12 participants being managers. In the next step study, we will increase the sample size of the employees to be interviewed. In doing so, we expect to derive more insight about what skills are needed and what gaps exist in the current workforce to meet the technological changes in the warehousing and industrial distribution industry. Third, the sample recruitment may constrain our further analysis of geographic differences among our participants about their perceptions of new technologies. As mentioned previously, the purpose of this qualitative study was to provide preliminary findings of how employees view work and training due to Industry 4.0 technologies. A total of 56 students enrolled in one author' class were contacted. Only 13 participants fully completed the survey. Most of them are from Texas. Our next study will certainly sample a large number of participants that better represent the population of the USA in the warehousing and industrial distribution industry. For example, we could choose some areas in the country that have the greatest number of warehousing and distribution centers. These areas have vastly different cultures and environments. This way, the results of the study would include a better reflection of how the future of work would impact varying cultures, thus providing a better insight into how employees and managers would be willing to accept the changes needed to incorporate new technologies into the work environment.

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