Augmented Reality & Artificial Intelligence Model: Optimizing Workforce Diversity

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Abstract

Many employees experience incivility in teams, and managers need to intervene to prevent undesirable outcomes (Daniels & Thornton, 2019). The purpose of this qualitative research is to propose an Augmented Reality (AR) and Artificial Intelligence (AI) model for how Human Resources (HR) and team managers (TM), through their organizational structure and culture, can adequately resolve conflicts within teams in order to eliminate workplace incivility. Twenty-three non-White male employees in the USA were interviewed in the study. Results show that 100% of participants were aware of diversity conflicts in teams, but only as few as 34.8% of the conflicts were resolved successfully. A literature review reveals that HR can implement AR applications in their business processes in order to capture incidents, and also use AI to analyze the incidents for an objective Hybrid Intelligence (HI) decision. Despite privacy issues with AR and bias in AI, this study will show their efficiency in optimizing workforce diversity. AR can be used to train employees in order to enhance their creativity, ethics education, and moral imagination, while AI can be used to reduce absenteeism, turnover, unequal treatment, stress, lack of motivation, and costs.

Keywords: Artificial Intelligence, Augmented Reality, Diversity, Human Resources, Team Management, Workforce

1. INTRODUCTION

Much of the incivility in teams is a result of the inability of both Human Resources (HR) and team managers (TM) to manage conflicts and employee satisfaction. Discrimination is a form of incivility because discrimination entails an unsociable, impolite, or offensive word, decision, or behavior directed towards the victim. HR problems that are resolved through information technology solutions measure HR development at 30%, skills management at 27%, recruitment at 25%, employee turnover at 18%, and lack of motivation at 9% (Berhil, Benlarmah, & Labani, 2020). HR's lack of social dialogue or communication with employees can lead to lack of trust and tension within teams, lack of skills management of employees can lead to lack of

proper training and lack of motivation, poor recruitment of team members can lead to stress and absenteeism, unequal treatment and harassment of employees can lead to high turnover, and lack of employee motivation can affect the productivity and performance of teams (Berhil, Benlarmah, & Labani, 2020). HR and TM must take time to know and appreciate their employees, especially women and minorities, in order to place them in teams where they can excel because they feel empowered to produce, and have advocates that encourage them to perform and mentors that assist them to succeed.

Much diversity research and many publications in the United States focus on non-White males because it is accepted that most of the resources and opportunities are controlled by White males.

Also, many federal demographic statistics in the United States are based on a comparison with Whites, especially White males, when it comes to issues of population, education, health, and employment. This is why HR is having a difficult time including minorities and women in the workforce efficiently because they have being conditioned for decades to dealing with HR issues mainly from a White or White male perspective. This lack of diversity in the workforce may also lead to poverty, which could result in disability, aged workers, and inadequate technology use.

Diversity-valuing behavior for ethnic minorities and females to become top managers is prevented because they are perceived to have lower competence and judgment (Hekman, Johnson, Foo, & Yang, 2017). Many organizations and workplaces prevent non-White employees, regardless of gender, from rising to positions of power to help make the necessary decisions that would increase the performance of non-White male workers in teams and hopefully increase the productivity of the entire team. HR and TM should ensure that non-White male workers are not denied access to managerial positions, because all members of the team should feel secure enough to see themselves in higher positions, as well as have adequate access to both mentors and advocates that understand their issues and perspectives. A match between team diversity and community diversity correlated with increased team performance, and high diversity teams in less diverse communities performed better than low diversity teams in highly diverse communities (Richard, Stewart, McKay, & Sackett, 2017). If HR and TM are not hiring enough qualified non-White male workers from the community of employment to be part of the team, and they are denied access to management positions, then the lack of diversity decreases the performance of these individuals and the productivity of the team.

Workplace discrimination was high for workers above the age of 48, was highest for Black women in terms of race and gender, and occurred four to eight times more for team members who complained about discrimination (Fekedulegn, Alterman, Charles, Kershaw, Safford et al., 2019), so race and gender incivility is tied to age incivility. Even in this study, it was clear that many of the older non-White male workers with issues were women, and they either complained or requested assistance to complete their tasks. Since race and gender incivility correlates with age incivility, it could be that many of these minorities and women had carried the identity of low performance as a culture through to old age

because of the neglect by untrained HR and TM with little or no team building and team management skills. Workers with disability are discriminated against in terms of termination and accommodation, especially those with sensory issues (Graham, McMahon, Kim, Simpson, & McMahon, 2019). It is true that team members with disability are perceived as slow and as a hindrance to task completion and quality, but in this study, many of the needed accommodations were met, disability services and infrastructure upgrades were provided, and some were assigned tasks that they could fulfill adequately.

Technology needs to be decentralized in a datafied world in order to change the effect it has on social, economic, and political inequality, as well as algorithmic discrimination (Peña Gangadharan & Niklas, 2019). Technology should not have to be the new means of segregation that denies certain members of society access to good jobs, income, and career networks. Technology should be available to all through adequate education and training in schools, businesses, places of employment, and even on farms in rural areas. Despite the fact that there has been research on both AR and AI, there is very little research on the combined use of AR and AI in HR and team management, especially in optimizing workforce diversity.

The rest of this paper will present the literature review of AR and AI, as well as the six areas of conflict and incivility that are most likely to hinder optimizing workforce diversity: race, ethnicity, gender, age, disability, and technology access. The research question, the relationship model, and the methodology for the study will follow. Then, the results of the study and discussion will be presented. Finally, the limitations of the study, and the conclusion and future research will be discussed.

2. LITERATURE REVIEW

Augmented Reality
AR is a user interface technology that augments a user's physical environment by overlaying it with virtually generated computer data from videos, graphics, images, sounds, and texts captured from various sensors. It allows the immersive capability to view content, communicate information, navigate, and change the way a user would interact with the physical or real-life environment (Barat & Liang, 2019). AR is a revolutionary approach that can be integrated into any information technological system to augment information in the physical world and our daily lives in both a cognitive and an

interactive way by capturing and coordinating digital data, tracking reference points within the data, and displaying virtual information combined with the physical environment (Aslan, Cetin, & Ozbilgin, 2019). This shows that AR can be used to capture data from the real-life environment, to be recreated virtually with enhanced sounds, texts, graphics, and images from sensors from various devices like cameras on smartphones, buildings, and cars. HR can also use AR data to make the necessary business decisions, train their employees, and manage their teams.

Organizations see the combination of big data and AR as a necessity, because visualizing data will enhance and improve organizational business strategy, develop creative solutions for need-based concerns, and analyze vast amounts of data from the Internet of Things, mobile or smartphone technology, and social media in real time (Aslan, Cetin, & Ozbilgin, 2019). AR helps users to evaluate products or situations in a three-dimensional (3D) view before making a decision (Yoo, 2020). AR can be used by HR and TM to investigate complaints within teams, see how well teammates work together, and know which teams are engaged productively, before making adequate decisions.

An AR user's perception of information quality (accuracy, reliability, objectivity, and relevance of content) and visual quality (clear, concrete, and appealing presentation of 3D graphics) positively influences both perceived diagnosticity (usefulness in learning and understanding the situation through functional features) and satisfaction (psychological and emotional response that exceeds expectation after experience); perceived diagnosticity positively influences satisfaction; and satisfaction positively influences loyalty, which is the user's repeat usage (behavioral) or recommendation and commitment to brand (attitudinal) (Yoo, 2020), as shown in Figure 1 in the Appendix. The accuracy and reliability of AR content and the clarity of its imagery influences the usefulness of AR for the users in understanding the situation exceedingly well, which, in turn, makes AR a dependable tool to rely on for decisions and to recommend for other situations. HR and TM can use AR satisfactorily and in a loyal manner to resolve conflicts within teams, reorganize teams with members that get along well, and know both who to train and what to train in order to optimize both team productivity and individual performance through diversity.

Many industries are integrating AR applications into their processes to increase efficiency and productivity, as well as to reduce cost, but HR should be able to use them for better communication, unbiased solutions, training, and employee satisfaction through the use of smartphones or data-glasses (Komar, 2020). These AR applications or platforms are excellent for creativity, ethics education, and moral imagination (sociable and acceptable decisions to all groups) because they offer behavioral simulation, which provides real experiences to resolve problems in the workplace (Sari, Sholihin, Yuniarti, Purnama, & Hermawan, 2021). Organizations such as Apple, Microsoft, and Magic Leap already have AR platforms within their business processes, so HR and TM can capitalize on this opportunity to ensure optimizing workforce diversity through effective training of employees and efficient team management for high employee satisfaction.

Artificial Intelligence
AI is made up of intelligent systems of tools, techniques, and algorithms that have the capacity and ability to think, learn, and decide, as well as to augment work, which involves the processing of natural language (analyzing human language), machine learning ability (algorithms for learning), and machine vision capability (algorithms for image analysis) (Jarrahi, 2018). AI is able to learn from past experiences and collect data in order to develop intelligent solutions, has the ability to learn and improve itself for knowledge-based tasks, and is excellent for analytical decision making, while humans are instrumental for intuitive decision making (Jarrahi, 2018). HR and TM can use AI to analyze AR data to train employees, organize teams, resolve team conflicts, and plan team building, based on the ability of AI to learn and understand the employees involved and develop an intelligent decision to resolve team issues.

The analytical approach of AI relies on the analysis of knowledge based on conscious reasoning and logical deliberation, but lacks the understanding of common-sense and unpredictable conditions, while the intuitive approach of humans relies on business instinct, gut feeling, and past experiences, and has the advantage of being creative and imaginative in decision making (Jarrahi, 2018). Merging the ability of AI to analyze lots of data in real time along with advantageous human intuition and insightful judgment is referred to as Hybrid Intelligence (HI) (Jarrahi, 2018; Dellermann et al., 2019), as shown in Figure 2 in the Appendix. HR and TM should rely on HI for efficient conflict resolution, adequate team building, and team management in order to optimize the workforce

through diversity. AI assists in improving human decisions by providing predictions, while humans assist AI to learn the updated machine learning models, so HI enables humans to benefit from AI's predictive ability and then humans can use their intuition, imagination, and creativity to make decisions based on AI's predictions, which have no bias, such as sexism, ageism, and racism (Dellermann et al., 2019). Without any bias or favoritism, HR and TM can use HI or AI on AR platforms to make adequate decisions that are fair and just to all involved within teams and the organization at large, in order to optimize the workforce through diversity.

An expert system is a form of AI or a computerized HI that emulates human expert behavior by acquiring and utilizing human expertise as both data and production rules within a computer program, which is also used to solve very complex situations (Abu-Nasser, 2017; Campbell, 2020). AI provides case-based or data-reliant reasoning from past situations, abductive or rule-based reasoning in an attempt to provide a new theory and objective judgment, and biometrics for identifying people based on physiological or behavioral qualities, which can be used to verify an identity or authenticate the unknown identity in question (Nissan 2017; Campbell 2020). HR and TM can use computerized HI or the expert systems of AI to make team or organizational decisions based on past satisfactory decisions in a similar situation, rules and theory to direct the AI analysis to an adequate decision, and biometrics to identify or authenticate employees who may have caused an incident that was unknown to witnesses in decision making processes that are fair, just, and acceptable to all.

AI platforms provide the opportunity to change the composition of a dynamic workforce, allow gender equality through fair competition for work, and are an essential tool for the inconsistent workplace (Abdeldayem & Aldulaimi, 2020). HR use AI to resolve 41% of HR issues, including absenteeism and turnover, lack of motivation and training of employees, employee satisfaction and stress management, harassment and unequal treatment of employees, as well as poor payroll and insurance management, which usually leads to higher costs (Berhil, Benlarmah, & Labani, 2020). AI applications are needed for voice recognition, tracking social media or emails of employees, word choice and body language, bias rectification and objective checking, and forecasting bright employees, as well as those that need position change (Bhardwaj, Singh, & Kumar, 2020). AI can be used by HR to optimize

the workforce through diversity. HR can use AI to keep employees in jobs that they will succeed at in order to motivate them, as well as improve their performance. Also, AI can be used to study both voice recognition and body language to eliminate bias, as well as train employees to enhance diversity.

Research Question
The research question of this qualitative study is: How do HR and TM use organizational structure and culture to manage the conflicts of race, ethnicity/culture, gender, age, disability, and technological gaps within teams in order to optimize both individual performance and team productivity? There are six interview questions used in this study to explore if HR and TM were effectively resolving diversity conflicts within teams for team optimization. In this study, school is also considered a workplace. The six interview questions are:

1)   How did your organizational structure and culture help to resolve a race-based conflict that hindered performance at work or school?
2)   How did your organizational structure and culture help to resolve an ethnic-based conflict that hindered performance at work or school?
3)   How did your organizational structure and culture help to resolve a gender-based conflict that hindered performance at work or school?
4)   How did your organizational structure and culture help to resolve an age-based conflict that hindered performance at work or school?
5)   How did your organizational structure and culture help to resolve a disability-based conflict that hindered performance at work or school?
6)   How did your organizational structure and culture help to resolve a technology-based conflict that hindered performance at work or school?

3. RELATIONSHIP MODEL

Despite the privacy concerns of AR and the bias of historical data in AI, this study will show that both AR and AI are effective tools to use together when managing teams to optimize both their performance and their productivity. All employees should be notified at the time of hire or annually that data from their smartphones (video, image, and sound) can be requested or volunteered to enhance individual performance and team productivity, if needed for a specific time and place at work.

This notification or contract should increase both professionalism in how employees communicate with team members, customers, and non-work

associates while at work, as well as professionalism in how they act or behave while on the job, because their smartphones could be a witness against them, if necessary. After all, HR already check our social media before hire these days. As for bias in historical AI data, HI can be used to analyze all the videos, audios, and images of the facts and display an AR model of what actually happened, for HR and TM to make a just decision, as well as use it for annual employee training.

Figure 3 in the Appendix is based on the combined models in Figure 1 (Benefits of AR) and Figure 2 (Benefits of AI), which is to combine AR and AI in order to optimize workforce diversity. There are a total of eight stages. The first three stages show how HR and TM may use AR. The second three stages show how AI may be used by both HR and TM in connection with AR platforms. Stages 7-8 show how satisfied and loyal HR and TM, as well as employees, may be with the use of both AR and AI to keep all employees feeling empowered and secure in the workplace, regardless of race, ethnicity, gender, age, disability, or access to technology.

The use of both AR and AI in Figure 3 to optimize workforce diversity in the workplace is actually a cycle that goes from AR to AI, to satisfaction and loyalty, then back to AR. This shows that workforce optimization through diversity with the use of both AR and AI together could be supported by HR and TM, as well as employees in the workplace, if it leads to an objective and fair judgment for all employees without any form of bias.

4. METHODOLOGY

I selected 52 non-White male employees who use Facebook to participate in this study, but only 26 responded, and 22 of them were interviewed. These participants were former high school or college peers I have not seen in over 20 years, past co-workers, and new contacts within the United States. Many of the participants in this study were Africans, African Americans, Asians, and women. I invited a Hispanic woman by email to participate in the study, so it brought the total number of participants to 23. Unfortunately, I did not have any access to a Native American. The study was about non-White male team members, regardless of gender, who may have faced team incivility because of their lack of access to power, mentors, or advocates at the workplace or in teams.

I invited six professors to review the six interview questions for clarity and purpose as expert consensus, but only five participated in the review process and helped to modify the questions. I interviewed a total of 23 participants from industries that included education, health, law, sales, contract work, and real estate. The interview lasted for between 13-26 minutes within 5 days by phone, with an extra 9 days for the participants to verify their responses by phone, Facebook, or text messaging, which brought the total days for data collection to 14 days. Saturation was reached for each of the six interview questions.

The data collection tools that were used in this study included a digital audiotape, interview protocol or interview questions, observation sheet, digital transcription, and NVivo 12 Plus qualitative software. For credibility of the study, both the digital audiotape and observation sheet were used to accurately record responses from the 23 participants. Transferability of the study was achieved by using an interview protocol with open ended questions, so that the participants could express themselves freely, as well as provide rich and detailed content. There was dependability in the study because the methodology is explained accurately so that anyone can see how the study was facilitated. Confirmability of the study was completed by ensuring that each participant was able to verify their transcribed responses as accurate (member checking). The qualitative software (NVivo 12 Plus) was used to code and segment the responses for analysis.

5. RESULTS

In this study, 11 or more participants out of 23, which is 48% of similar responses for each question, was considered as saturated. All percentages were based on actual number of respondents out of 23 (total number of participants). The "Word Frequency Query" of NVivo was used to determine the top key themes in the responses, and the "Text Search Query" of NVivo was used to find the number of participants that used the top key themes. The "Query Word Tree" from the text search results provided valuable verbatim transcripts for each of the key themes. Below is the analysis of the study:

1) *How did your organizational structure and culture help to resolve a race-based conflict that hindered performance at work or school?*

All of the participants were aware of racial incivility in teams, and, as per Table 1 in the Appendix, 56.5% of them said that the racial conflict was unresolved because of lack of skills to address the matter, and that some Whites even got rewarded for incivility. This shows that there is a real need for HR and TM to do more in making sure that each racial group has adequate representation within management and teams that matches the percentage in their locality, so that each racial group can have access to power, mentors, and advocates that understand and can address their perspective effectively. There was even a case in the study where a manager said that a White woman's incivility was based on her health accommodation and she was rewarded by now working from home with full pay. The study shows that 56.5% of racial complaints are unresolved, with 52.2% saying that team members need to be educated and trained on how to identify and address racial issues, such issues are not reported or talked about at work, and many of the HR and TM do not represent the non-White male employees or understand their issues because they are not the usual victims of team incivility.

2) *How did your organizational structure and culture help to resolve an ethnic-based conflict that hindered performance at work or school?*

According to Table 2 in the Appendix, only 47.8% of participants said that the ethnic conflict was resolved and 60.9% were aware of ethnic conflicts. 60.9% of participants said that there was tolerance for ethnic difference or they were unaware of much ethnic difference due to strict corporate policies. This shows that when HR and TM use policies and training to encourage team members to embrace and tolerate cultural, ethnic, religious, or personality differences, there is a reduction in team incivility through awareness and support from leadership.

3) *How did your organizational structure and culture help to resolve a gender-based conflict that hindered performance at work or school?*

As per Table 3 in the Appendix, 60.9% said that the gender conflicts were unresolved, and only 34.8% of gender conflicts were resolved. Most of these victims were women, and some of the team incivility was directed towards them by other women in favor of men, or by women that felt that other women were not supposed to be in positions of power. It seems women have been acculturated not to see themselves in positions of

power or deserving to be in power, and they seem not to see themselves as good mentors or advocates for each other, because 65.2% of participants mentioned gender as an issue. One of the participants said that a woman gave up her position to a man because she did not feel she should be there, despite the fact that she was next in line for the position. Another participant said another female felt she was too old to work there, rather than feeling that employees could work together or help each other. Gender incivility was not just the majority of the unresolved complaints, but it should be a priority for HR and TM to ensure that women see themselves in positions of power and that they are mentoring as well as advocating for each other.

4) *How did your organizational structure and culture help to resolve an age-based conflict that hindered performance at work or school?*

The study shows that, as per Table 4 in the Appendix, 78.3% of participants were aware of age incivility. Only 47.8% of them said the age conflicts were unresolved, which means that about 52.2% of the complaints were resolved. From the study, it seems older workers are good at asking for assistance, as well as getting the necessary collaboration and assistance from their team, despite some members having issues with older workers for being slow and making errors on tasks. The study revealed that some firms retain older workers and accommodate them until retirement, but some industries, like law firms, keep them on for their experience and also because they gain promotions and other favors ahead of younger team members. HR and TM need to ensure that promotion and favors are according to merit and are not age-based, in order not to be uncivil towards younger workers. Older workers need to be reassigned to work they can accomplish more independently or added to teams where their contribution is significant for the task to be completed. Quarterly training is also essential in educating team members on how to work with and accommodate older team members, as well as how promotion and favors should be based on only merit or performance.

5) *How did your organizational structure and culture help to resolve a disability-based conflict that hindered performance at work or school?*

The study shows that 86.9% of participants were aware of disability incivility, and, as per Table 5 in the Appendix, 78.3% said that the disability

conflict was resolved effectively. In the study, 69.6% of participants said that they did not have issues with disability because the policies of their workplace are designed to accommodate workers with disability. Many have disability services to assist and accommodate workers with disability. Also, there is accessibility, and renovation is available for those that need it to complete their tasks successfully. Based on the study, it is quite impressive how the workplace has accommodated and created policies to resolve issues of disability. Resolution of disability issues was not just one of the highest among the resolved conflicts, but it is the easiest to observe and prove. This means that if HR and TM can be trained to understand and identify incivility, and team members are also trained to identify it instead of experiencing fear of retribution for speaking up for coworkers that lack power, mentors, or advocates, many other forms of incivility will have a higher resolution rate too.

6) *How did your organizational structure and culture help to resolve a technology-based conflict that hindered performance at work or school?*

All of the participants were aware of technology issues at work, and, as per Table 6 in the Appendix, 82.6% said that the technology conflicts were resolved. This high resolution rate from the study was based on the fact that 73.9% of participants' workplaces have technology support for their team members that need it and provide training for new technology to assist those that are uncomfortable with the latest technologies and need new technology skills. The study shows that 69.6% of the participants' workplaces have various forms of training, ranging from 2 weeks to 6 months. The training could be webinars or online training, which could be a one-on-one, group, or classroom session.

6. DISCUSSION

The combined AR and AI model for optimizing the workforce through diversity that is presented in Figure 3 is explained below:

Stage 1 is Information Quality: Workplace leadership needs to first get permission through contracts and training to have access to use employees' smartphone data (videos, images, and sounds) for team productivity, individual performance, and team training. HR and TM can then use AR to analyze accurate videos, reliable audio, and relevant pictures from street, building, car and smartphone cameras, and sounds from digital speakers and microphones (Amazon's Alexa, Google Assistant, or Apple's Siri), as well as images for the location of incidents from all angles and directions. This is to aid HR and TM in training and managing employees, investigating a diversity related complaint or an incident about discrimination, and comparing it with what witnesses, victims, or the accused said about the incident.

Stage 2 is Visual Quality: HR and TM use AR to be present at the scene despite being absent in the real world, or for when they were present, but still need to verify or get additional information about what was seen and heard in order to avoid any form of bias. At this stage, the multisensory and multi-dimensional characteristics of AR are essential. HR and TM are now placed into the scene of the incident while observing and listening to what actually occurred. HR and TM are also able to perceive any verbal and physical abuse, feel any slight physical contact, or experience the taste of drink being poured, or the smell of coffee, to aid with training.

Stage 3 is Perceived Diagnosticity: HR and TM are absorbed in or focused on the combined effect of both Information Quality and Visual Quality. This gives them the opportunity to play with the functional features of AR and to manipulate video, graphics, sound, and images in order to match the AR experience with what was reported by witnesses, and allows them to come to an adequate understanding of what actually happened at the scene. This will be useful to team management.

Stage 4 is Uncertainty: This is the point where HR and TM become an AI user by combining the AR experience with AI in order to arrive at an objective conclusion and make a just decision without bias. This is where HI begins, because HR and TM become an AI user that uses human intuition, imagination, and creativity to inform AI about the time, directions, angles, and location of an incident, in order for AI to provide real time analysis of the incident.

Stage 5 is Complexity: HR and TM decide which videos, sounds, and images are to be analyzed for decision making, and AI uses its analytical abilities to sort through the vast amount of data in order to come up with a decision about what actually happened. This can help to monitor who works well with whom in team building.

Stage 6 is Equivocality: AI uses biometrics to verify or authenticate who the victims or perpetrators are, especially when there are no witnesses, or they are unsure. Then, case-based

or data-reliant reasoning is ignored in favour of abductive or rules-based reasoning, which applies logic or theory based on expert systems or computerized HI that rely on the decision or behavioral patterns of expert HR and TM who have successfully dealt with diversity conflicts favourably in the past. Case-based reasoning may have some bias from the past, so it is best to rely on abductive reasoning from HI to justly resolve the issue at hand. This could lead to reduced absenteeism, turnover, and lack of motivation.

Stage 7 is Satisfaction: HR and TM are satisfied that the AR has provided all the necessary videos, audios, and pictures required to make an adequate judgment about the incident. HR and TM are satisfied and confident that they provided the necessary models for the exact location and time of incidents that need to be analyzed, as well as accurate videos, reliable sounds, and relevant pictures for adequate decision making by AI. Also, employees feel both empowered and secure in the workplace because their differences or uniqueness is no longer a justification to be unproductive, they do not have to deal with somatic health issues, they do not consider bleaching their skins or hiding their true opinions in discussions, and do not have to embrace absenteeism and lateness as a work culture.

Stage 8 is Loyalty: HR and TM may believe that both AR and AI together is a reliable way to objectively find out what actually occurred and recommend an adequate judgment of the offence. HR and TM may be so impressed with both AR and AI that they recommend it to other organizations, as well as reusing it frequently and as needed. Also, employees may believe in both AR and AI because they actually help to resolve diversity issues adequately. Furthermore, the experience will not only help to give all employees the confidence and security to be productive at work, but it can also be used for annual training to heighten employees' professionalism towards both co-workers and customers alike in terms of communication and behavioral skills.

Team incivility directed at diversity is real in the workplace and is negatively affecting the performance of minorities and women, regardless of race, ethnicity, gender, age, disability, or access to the internet, and it greatly reduces their productivity within teams. The ability of HR and TM to understand and identify various types of incivility against diversity is essential in preventing and resolving many of these uncivil behaviors within teams. Quarterly or annual training about team incivility and awareness of what various team incivilities are should be a priority for HR and TM in order to optimize both individual performance in teams and team productivity. Also, research shows that adequate diversity, where both management and teams match or represent the subgroup percentage of the locality is more of a productive environment because all team members get to feel secure and engaged within the team, due to adequate access to power, mentors, and advocates that represent them.

7. LIMITATIONS

Potential hires allowing data from their devices to be requested or volunteered as a condition for hire was not tested, but we assume that it is possible, as long as they are guaranteed that it will only be used for team management purposes.

White male workers were excluded from this research because they are the majority in America and already have access to power, mentors, and advocates in management and among employees in many workplaces. Also, research shows that White women benefit more than other minorities when it comes to affirmative action (Finley, 2017), and that White men gain more admissions than women and minorities in admission processes in the United States (Zimmerman, 2017). There was also no Native American in the study because I had no relationship with any on Facebook and did not have contacts for the few I knew when I was a student in university.

The research method could have been quantitative, but a qualitative single case study was chosen to explore how HR and TM are optimizing workforce diversity, based on their organizational structure and culture. The sample used in the study could have been larger, but saturation was achieved for all research questions. Triangulation could have been used to see if the workplaces of the participants had policies against discrimination and if those policies were adequately supported by their workplaces, but this study relied on the participants to provide their workplace structure and culture as they saw it in their opened-ended responses.

8. CONCLUSION & FUTURE RESEARCH

In summary, many firms need to consider managing diversity and discrimination within teams as a priority, and strategize towards optimizing both individual performance and team productivity. HR and TM should be trained to

understand that every team member has the right to power, mentors, and advocates at all levels of the company, so that it becomes difficult for power blocks to be formed to monopolize decision making that disadvantages any subgroup.

When it becomes impossible to form power blocks, then the team members will have legitimate respect for each other, which eliminates discrimination and enhances both performance and productivity, and those that cannot fit in would have to leave. Both AR and AI should be used to train HR and TM, as well as employees, that many incidents can be adequately investigated and an objective decision can be reached without bias, as long as the data was captured digitally.

The workplace is solely a place for performance and productivity based on both knowledge and experience through networking, and adequate networking becomes impossible with the formation of power blocks to discriminate against others and reduce their performance. Reduced performance is based on uncivil behaviors of unexcused lateness, unnecessary absenteeism, unexpected quitting, low self-esteem, somatic health issues, managers not resolving conflicts, preventable lawsuits, and even violence that may result in hospital costs, which leads to reduction of profits, and, ultimately, productivity.

Future research is needed to show how well the AR and AI model would work on a larger sample, using a comprehensive survey. Also, future research is needed to study how to prevent a biased or unjust HR and TM who could intentionally choose the wrong location, angles, and directions for both AR and AI, as well as claim there was insufficient evidence, or intentionally use an expert system of HR and TM that does not believe in diversity. HR and TM, victims, and the accused must ensure that the video, audio, and images being used are accurate, complete, consistent, and current, to arrive at a just, factual, and creditable conclusion.

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APPENDIX

Key Theme	Percent	Transcribed Verbatim
Unresolved	56.5%	Complaints are unresolved; situation still unresolved; race issues are usually unresolved; unresolved and white woman got rewarded; unresolved due to lack of skills; race difference is unresolved; unresolved by team leader
Issue	52.2%	Educate staff of prevent these issues; race was an issue; was unable to address the issue; woman felt slighted because the issue; issue was unresolved
Race	52.2%	HR handles race; someone felt that race; do not talk about race; because of her race; situation on race; race at work; race based issue; race conflict not reported

Table 1. Response to Race-Based Conflict

Key Theme	Percent	Transcribed Verbatim
Ethnic	60.9%	Not sure about having an ethnic; not much ethnic; writing project addressed the ethnic; ethnic intolerance; ethnic difference; ethnic disparity; ethnic double standard
Resolved	47.8%	Ethnic intolerance is resolved; awareness resolved; ethnic disparity was resolved; resolved at work; resolved; resolved through preventive strategies

Table 2. Response to Ethnic-Based Conflict

Key Theme	Percent	Transcribed Verbatim
Gender	65.2%	Gender based; gender bias; gender difference; gender gap; gender inequality; gender difference; gender conflict; unresolved gender; gender conflict
Unresolved	60.9%	Gender disparity went unresolved; gender bias is still unresolved; gender gap is unresolved; gender inequality is unresolved; unresolved gender gap in pay; unresolved because they did not care

Table 3. Response to Gender-Based Conflict

| Key Theme	Percent	Transcribed Verbatim
Older	78.3%	Complains about hiring older; no complaints from older; not respected by older; being around and older; older workers get promotion; older people get awards or favors; older worker approaching retirement; older workers make errors
Age	47.8%	Bias in age; because of her age; disagreement around age; age bias is not reported; age conflict was unresolved; age divide; age gap; age difference
Unresolved	47.8%	Age gap issue is unresolved; age difference remain unresolved; complaints are unresolved; bias in age was unresolved; age conflict was unresolved

Table 4. Response to Age-Based Conflict

| Key Theme	Percent	Transcribed Verbatim
Resolved	78.3%	Disability issues are usually resolved; disability services are resolved; accommodation is resolved; renovation has resolved; ability divide is resolved
Disability	69.6%	Short term disability; from disability services; no discrimination on disability; sensitive to disability issues; workers with disability; disability accommodation; disability accessibility; disability requests

Table 5. Response to Disability-Based Conflict

| Key Theme	Percent	Transcribed Verbatim
Resolved	82.6%	Resolved by management; resolved technology conflict, resolved unsatisfactory; technology need resolved; training issue resolved; technology deficiency resolved
Technology	73.9%	We provide technology support; requires less technology; training for new technology; uncomfortable with technology; skills with technology
Training	69.6%	Group training; one-on-one training; 2 weeks to 6 months training; Webinars or online training; training is done; training for 6-8 weeks;

Table 6. Response to Technology-Based Conflict
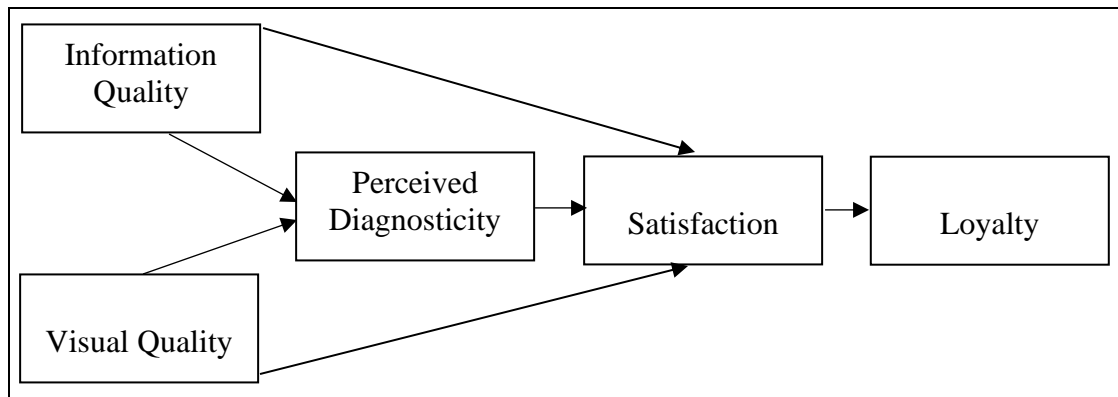
Fig. 1. Five key features of augmented reality
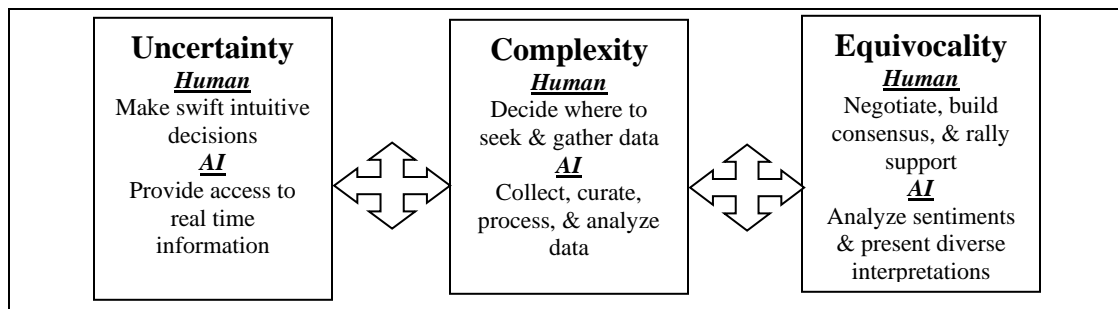
Fig. 2. Hybrid Intelligence (Human & AI) decision making situations (Jarrahi, 2018)
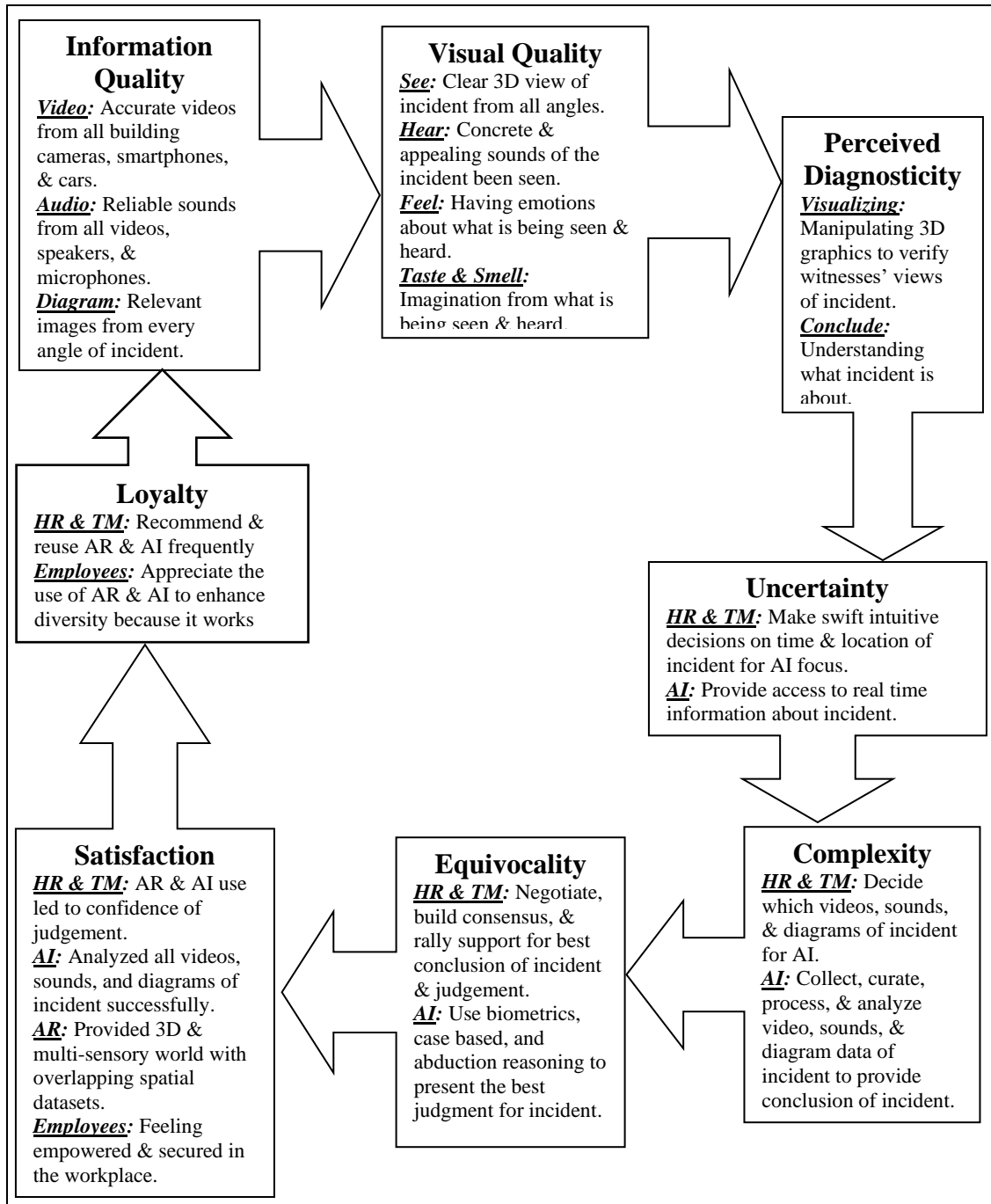
Fig. 3. Combining Augmented Reality & Artificial Intelligence Model to optimize workforce diversity