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Public Policy and Trust in Artificial Intelligence Decision Making

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Walden University

College of Health Sciences and Public Policy

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Avril Bunbury-Thomas

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Walden University
2025

Abstract

Public Policy and Trust in Artificial Intelligence Decision Making

by

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MA, Brooklyn College, 2004

BS, CUNY Baccalaureate Program, 1998

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Policy and Administration

Terrorism Mediation and Peace

Walden University

February 2025

Abstract

Technology is largely unregulated at present, which raises a safety issue for the automated decision-making process of multiagent systems (MAS) using AI applications. This study was conducted to explore whether a policy-making rule for decisions can protect the public from the social implications of biases, challenges, risks, and uncertainty while exposing a trust gap. Computers can dominate life, and this research was conducted to explore how to trust the decision-making process of MAS, mainly when there are no guardrails or regulations to manage the system. As a result, the generic qualitative inquiry was used to explore how concerned computer users are with the decision-making process of MAS and whether a policy-making rule for decisions can protect the public interest. The research question focused on how online university students and graduates perceive MAS decision-making processes and whether regulatory policies can demonstrate trust. Interviews were conducted with 10 participants between age 18 and 65 who live in the United States. The framework used to explain the trust phenomenon is mixed scanning theory, which allows for a regulatory policy approach to build trust in MAS decision making. The study's findings revealed that without protection, participants would continue to worry about trust. The concern for trust rests on collective action, course of action, and protection to shape the decision-making policies. As a result of these overarching results, policymakers are more likely to recognize the necessity of developing embedded support tools that can positively influence society, which can have implications for positive social change.

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Dedication

This dissertation is dedicated to the memory of my father, Henry Theophilus Bunbury, a humble public servant who taught me my core values. Among them was what trust means and how it is relevant for the greater good of all humanity when its value emerges. Dad, you also stressed that we could realize value and dignity from our education. So, thank you, Dad, for imparting these values and being a loving and trustworthy father.

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Most of all, let me remind the future scholars of Craig Village, East Bank
Demerara, Guyana, who are seeking a sound higher education: It is not where you start in
life that matters but where you finish. One love!

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Chapter 1: Introduction to Study

Introduction

Computers dominate life, but this can raise concerns about how the decisions received via artificial intelligence (AI) are made without trust or regulations. Bilal et al. (2020) stated that when computer users find themselves in a situation where they have to decide whether to trust emerging technologies or whether to relinquish personal information, computer users encounter a decision-making dilemma. As a result, this study was conducted to explore the determinants of trust in decision-making, the impact on computer users, and how it can inform policymakers. Dorri et al. (2018) defined *trust* as reducing uncertainty in cyberspace by developing and implementing security systems. In that regard, this topic of study explored trust in the decision-making process of multiagent systems (MAS), an AI application. The study aimed to understand whether computer users are concerned about trust in the decision-making process of MAS. Acting as autonomous agents within an open-distribution processing environment, MAS was designed to solve tasks, learn, make decisions, and handle complex problems in an unregulated world.

AI breakthroughs and impressive achievements abound, but this study was conducted to understand computer users' experiences with the decision-making process of MAS, particularly the social implications of biases, challenges, risks, and uncertainty. Dorri et al. (2018) stated that computers with shared knowledge or resources and predefined communications with other entities limit autonomous decision-making flexibility. Despite the broad applicability, Dorri stated that MAS must overcome several challenges, including coordination between agents, security, and task allocation.

MAS can analyze and learn from data and execute actions based on programming and algorithms. As a result, computer users must be made aware of challenges and should be instructive to understand potential pitfalls and limitations and identify future research directions. In that regard, Ramchurn et al. (2004) presented trust from an individual level and found uncertainty. Also, Dorri et al. (2018) noted that since 2002, the security network of MAS has studied, learned about, and detected new threats and challenges. Nonetheless, MAS should be guided by a trust model. Because MAS is an autonomous agent-based system, Dorri et al. established that MAS has an intrusion detection system comprising of the following five agents: collective, detection, decision, response, and collaborative agents. MAS can operate by routing data contents to a collaborative agent, which delivers the decision to a responsive agent, making MAS a viable solution for the evidence of trust. In that regard, not having a trusted tool presents a research gap in which policymakers can help to foster algorithmic accountability.

Furthermore, this research explored how policymakers can ensure that guardrails and policies are in place to protect citizens by filling the existing gap. Kraus et al. (2019) noted that developing efficient algorithms to generate explanations in real-time is challenging, but not establishing trust for computer users can be problematic. While very few studies have addressed the issue of trust in technology, this study explored trust from a public policy perspective. Lapowsky (2023) noted that policymakers such as New York Congresswoman Yevette Clarke teamed up with Washington, D.C., lawmakers in April 2019 to introduce the Algorithmic Accountability Act. As a result, in 2022, the U.S. Senate introduced Bill S.3572, Algorithmic Accountability Act of 2022, which requires

companies to conduct impact and privacy assessments on automated decision-making tools.

Clarke has also worked on addressing the need for a trust application to be run by AI because of the challenges, biases, and uncertainty that computer users experience in an open distribution environment. Bilal et al. (2020) stated that computer users' relationship and expectations with MAS stem from functionality, helpfulness, and reliability. In that regard, this study examines the social implications of MAS based on the relationship of 10 participants. Dorodchi et al. (2016) added that trust is a critical factor when dealing with distributed systems, and trust must be considered at all stages of system development. Adamson (2018) discussed the challenge of secrecy and public scrutiny of AI systems and stated there is a need to be more knowledgeable about technology development, and Newman (2017) addressed the government's role in developing and using artificial intelligence and stated that AI decision making has challenges that come with it.

Additionally, Villafranco (2020) addresses the issue of self-regulation within AI space and notes that by using an agent, there is 91% accuracy in attack detection. However, Yarali et al. (2020) stated that automated systems such as MAS with correcting capabilities operate without users knowing the system's challenges, presenting risks to users. In light of the research done by Dorri et al. (2018) and Yarali et al., the need for intelligent decision support is the reason for exploring a public policy study of trust in decision making in an AI application.

Moreover, this research analyzed why regulatory governance should act as a guardrail for trustworthy decisions made by MAS. Rossi (2019) stated that a more desired

system is transparent, explainable, ethical, adequately trained with appropriate data, and free of bias, where all parties can comprehend the conditions sufficient for trust. Learning about technological developments and not being aware that the system undermines individuals' ability to protect themselves is a disservice to society. Further, Bromley-Trujillo and Karch (2019) added that perceived scientific uncertainty might amplify a policy issue and introduce legislation.

In that regard, Epley et al. (2023) reiterated Senator Schumer's comments on the importance of a regulatory framework that allows independent experts to review and test AI technologies before public release or update. In doing so, users can access those results citing 10 US Code §2358, as the rules for regulatory processes on tasks performed under AI. Even so, Eric Schmidt, the former CEO of Google (2023), admitted in his address to the Wall Street Council that he did not have a definitive solution for effectively governing AI systems. With Schmidt's cliffhanger, this study addressed a policy that concentrated on uncertainty and bias in an open distributed environment, such as MAS, and the study can be instrumental in preventing existential risk.

Chapter 1 includes an explanation of the following sections essential for this study: background, problem statement, purpose of the study, research questions, framework, nature of the study, definitions, assumptions, and scope and delimitations. Finally, the study's limitations and significance for establishing a framework for trust in the decision making of MAS are included in the summary.

Background

This study used mixed scanning theory (MST) to address a regulatory policy approach to identify evidence of trust in the decision-making process of MAS.

Abedinzzsdeh and Sadaoui (2014) stated that MAS has become an open system containing malicious and untrustworthy service providers and overlooking this demonstrates risk.

Also, past and current literature has indicated the level of risk, the scope, and the progression of this topic. Some research demonstrating risk by MAS includes Burnett et al. (2011), Cooper (2012), Wellman and Rajan (2017), Adamson (2018), Dorri et al. (2018), Fagbola and Thakur (2019), Bilal et al. (2020), Torres (2021), Miller (2021), and Kaire et al. (2021)—all provided different explanations on how decision making is left unshaped by public policy decision makers. As a result, this research explored how trust could help to provide guidelines, policy, and regulatory measures by addressing uncertainty, biases, unawareness, and risk in the open distributed environment. Providing computer users with a trusted tool is necessary rather than encouraging methods of normative individual action.

MAS applications expose a trust gap in the decision-making process that could present a social issue for computer users. This study examined what trust means to computer users who have developed a relationship with the MAS application, mainly because computer users have arbitrarily surrendered to technology without identifying trust. More importantly, it is imperative to protect social value because of computer users' mute participation in decision making. As a result, it becomes challenging to understand how positive change can occur with a technology that has its own preferences concerning

solution plan properties. Dorodchi et al. (2016) stated that a framework should be in place to explain how trust is a critical factor when dealing with the distributed system. The lack of trust in the decision-making process of MAS places computer users in an unfamiliar situation where vulnerability to this complex opportunity presents anxiety, fear, and threats. As Bilal et al. (2020) stated, vulnerabilities in emerging technologies and the lack of transparent, flexible, and culturally adaptable data protection rules that needs attention to technology development and application. In that regard, regulations on data ethics are needed because of the uncertainty surrounding trust situations.

Moreover, Adamson (2018) noted that 60 years ago, artificial intelligence occurred, but knowledge of technology was a closely guarded secret. However, because of today's uncertainty, biases, and risk, computer users need to be aware of how to trust the decision-making process of MAS. Scientists and policymakers must succeed in examining and building trust because data forms the decision, and users are left to reproduce the biases, challenges, and ignorance of past difficulties and strains that AI technology generated.

In that regard, policymakers recently met with experts to address measures AI should take to create guardrails. For instance, ABC News (2023) stated that Congress invited science and technology experts who warned that mitigating the dangers of AI should be a global priority. Further, *Politics & Policy* (2023) stated that Senator Schumer laid the groundwork for Congress to regulate AI and mentioned the following four guardrails that bipartisan legislators slated to consider ensuring responsibility that requires of AI: (a) identification of who trained the algorithm and who is its intended audience;

(b) disclosure of its data source; (c) an explanation for how it arrived at its responses; and (d) transparent and robust ethical boundaries.

Moreover, Schumer also focused on implementing a solution for scanning facial recognition at the airport and sorting social algorithms to educate society when deciding on transparency guidelines for AI's capability. Likewise, Newman (2017) stated that the government's role in social development that comes with AI's decision making raises questions on regulating AI's responsibility regarding issues such as flawed fabrication, fake news, fake images, and hallucination. Ignoring the constraints of MAS' action in managing the distributed infrastructure creates the problem of how to trust the decision-making process, and as Miller (2021) noted, trust and algorithmic features influence user satisfaction depending on the planning and processing outcome when making decisions. Disregarding the operations and algorithmic features of MAS creates vulnerabilities, uncertainty, inaccuracies, threats, and risks that require regulatory guidelines as a remedy.

Because this study was conducted to implement a trusted tool in the decision-making process of MAS, the goal was to identify how to move computer users from unfamiliar to familiar. In that regard, the study aimed to provide policy and regulatory measures as evidence of trust in decisions. Also, the research aimed to understand human experience and how people construct meaning. As a result, Kostere and Kostere (2022) allowed this study to apply the generic qualitative inquiry to show how having policy guardrails could instruct and govern AI operators' actions and raised concerns about why the study of trust in decision making is needed. This study is necessary because users must

avoid distrust, uncertainty, vulnerability, biases, and cyber security risks because users depend on the intelligent system 24 hours a day.

Further, the pursuit of trust can mitigate the margin of error with the agents primarily because they have their agendas and use mechanisms and protocols to join and leave platforms. Due to computer users' severe risks and threats, a guardrail process is necessary to deter security risks. For example, the U.S. Federal Bureau of Investigations Internet Crime Complaint Center (FBI IC3, 2020) reported that from 2016 to 2020, FBI IC3 received some 2,211,396 complaints, reporting a loss of \$13.3 billion due to cybercrimes. Torreno et al. (2017) added that MAS exposes modern society to agents' abilities irrespective of the goals or knowledge the distributed application seeks to achieve. Also, Dilek et al. (2015) found that trust is needed because abnormal detection and prevention exist with the intelligent system, which has broadened the concern for users' safety. MAS's lack of responsible management and regulatory policies adds to the trust gap; this study is needed to explore how to trust decisions made in MAS from a public policy perspective. For example, this study used regulatory processes like audit, verification, and monitoring to establish trust.

As a result, the process forces users to seek a regulatory response for the deliberate role of adoptive actions taken by MAS's decision makers. Dias et al. (2020) stated that the development of supporting tools and technical implementation synergies is needed to facilitate the means. This study was conducted to address the trust gap by taking a look at the importance of policy regulations in MAS, as well as focusing on security policies.

Problem Statement

Although computers can dominate life, this research was conducted to explore how to trust the decision-making process of MAS, an artificial intelligence application, mainly when there are no guardrails or regulations to manage the system. In that regard, additional qualitative research is needed to understand the phenomenon because it is current, relevant, and significant for this discipline. Public policy articles include studies on rational decision making by AI. Richards et al. (2021) noted that consensus is forming around the need for a more evident record of the increasing use of AI systems and applications in high-stakes decision making. Richards et al. underscored the importance and significance of transparent reporting mechanisms. For example, AI applications such as ChatGPT, Bing AI, Chatbot AI, Chat Sonic, and Bard by Google all generate responses from the internet without a trusted tool.

Furthermore, Adamson (2018) noted that a precautions-based approach to trust may also be relevant in national initiatives to develop AI because the decision is partially opaque. As a result, Adamson stated that all countries must be prepared to control the risk of AI going awry because no national initiative has been developed for AI. Obscurity is not progress. Therefore, a policy should be put in place that is social practice and not a singular or isolated event.

Previous research from Dorri et al. (2018) stated that agents acquire information or knowledge for the decision-making process from neighboring agents or the environment, making an agent vulnerable to malicious entities that may share falsified data to impact the decision. Rajan and Dharani (2017) noted that agents imitate the decision-making

ability of human knowledge while acting in an environment to achieve goals. Shahrदार et al. (2018) added that decision support systems are in place for specific critical programs, such as the stock market and other targeted markets where vital decisions are made, making trust essential. However, current research from Miller (2021) stated that the algorithm's decisions or results affect the individual and society. Also, Sivan-Sevilla (2023) addressed the decision-making process from a public policy perspective and stated that well-designed policies alone cannot prevent social harm from new technologies. Instead, watchdogs must have tools to scrutinize how such policies are implemented, paving the road for digital accountability.

Adriaans (2020) and others provided current relevance showing how technology is pivotal to society and science. However, when the community is without guardrails or regulations, it is left to the decision makers' whims, which would be difficult for society to trust because there are no criteria to meet. Rossi (2019) added that there is a need for strong collaboration with policymakers and regulators on autonomous entities because prior academic work focused on approach, engineering, and contract (see Cheng et al., 2019; Dorri et al., 2018; Fagbola & Thakur, 2019; Miller, 2021; Samuel et al., 2020; Villadiego, 2020; Wellman & Rajan, 2017). However, Adamson (2018) stated that alongside the technical challenges of developing AI technologies sit the societal question of trust, which is primarily the focus of this study. Kraus et al. (2019) added that focusing on finding ways of explaining to a user how an AI system decides is more critical in multiagent environments. In that regard, the trust gap is a relational problem and is

relevant to this study because not knowing how decisions are made can impact the daily life of everyone using a computer.

MAS has its corrective preferences that involve a course of action to find a solution, compromising safety if the information is not correctly defined. Dorri et al. (2018) stated that users must know that the algorithm design consists of autonomous agents with an inherent ability to learn and make independent decisions. As Miller (2021) noted, the algorithm is a repeatable process, and the outcome is based on data. Agents must be vetted because they can come and go from the environment. As a result, MAS faces challenges that include coordination between agents, security, and task allocation. Because the public does not know the limitations of MAS, the system fails to be defended. In that regard, this research demonstrates how individuals face an untrustworthy position, which makes safety, policy, and regulation in decision-making management a priority.

Further, Dorri et al. (2018) stated that the challenges MAS present require further studies because technological advancements have taken on a social role, making people vulnerable in ways that challenge their epistemic capacity. In that regard, MAS applications contribute to individuals' competency deficits. What prevails is the responsibility of policymakers and the makers of MAS applications to satisfy the evidence of trust held by computer users while implementing the actual providence of the technology.

Purpose of the Study

The purpose of this generic qualitative inquiry was to explore how concerned computer users are with the decision-making process of MAS and whether a policy-

making rule for decisions can protect the public interest. Building on the extensive work done by Dorri et al. (2018) and Rossi (2019), this study intends to show how AI techniques rely on vast amounts of data, algorithmic commands, how the data are handled by AI and by those who produce them are without trust.

As Adamson (2018) noted, an AI programmer can reflect their own assumptions in an algorithm, making trust in this uncertain situation significant. Marr (2018) stated that IBM, humans, and machines across the globe create 2.5 quintillion bytes of new data daily. Faught (2023) stated that with all that data mining comes a need for public policy and decision making to keep pace with the rapid advancement of technology. As a result, the findings in this study can provide a policy that establishes evidence of trust. While this interpretivism paradigm emphasizes an action based on user experience, it intends to demonstrate how policy regulation can pave the way for trust. Keep in mind that this phenomenon proposes an epistemological question regarding the existence of trust in the decision-making process, which generic qualitative inquiry assisted in discovering.

Bellamy (2016) stated that with generic qualitative inquiry samples, individuals can determine what works best in each situation. For example, one can draw on a single approach by combining several qualitative methods. However, it can deviate from the intent, guidelines, or rules in a way that may benefit the study or does not adhere to any recognized qualitative approach. As a result, this study explored how technology operates without consequences and demonstrates the need for policy to bridge the gap between computer science and public policy. Sivan-Sevilla (2023) stated that in 2022 alone, nine AI-related U.S. federal laws and 21 state-level laws were passed to limit threats caused by

AI. While these laws help to explain the trust issue from an epistemic inquiry, these laws are also technological policies that help to protect society and the need to track policy compliance.

Research Questions

The research questions explored how to trust the decision-making process of MAS. The design of each question shows whether trust matters to computer users and if a tool could be evidence for trust. Significant demographics to the study were the age and experience of participants to understand differing needs. Specifically, the questions seek to find if trust could be communicated or modeled as a tool in MAS decision making:

RQ1: What concerns do students or graduates at online universities have about trusting the decision-making process of an artificial intelligence application using MAS?

RQ2: What concerns do students or graduates at online universities likely have about regulatory policies aimed at demonstrating trust in MAS?

Theoretical Foundation

The theoretical foundation for this qualitative study focused on MST, founded by Amitai Etzioni (1967). MST combines rational and incremental decision processes to provide for decision-making and policymaking operations. Accordingly, Etzioni's original research question states to what extent social actors can decide their course and to what extent they are compelled to follow a course set by forces beyond their control. Etzioni combined the rational and incremental approaches and, after analyzing them, found limitations. As a result, Etzioni's findings produced a mixed scanning approach that

showed how collective effort, and public policy can secure a higher standard of commitment than relying on individual responsibility.

Miller (2021), Rossi (2019), and Tambou and Tsoukias (2023) have shown how computer users or social actors have relied on the decision making by MAS through AI, and this impulsive behavior could have serious consequences. The concerns computer users may have about following a course set by forces beyond their control and the extent to which they are compelled to follow such a course that is beyond their control is what this study sought to understand. Because this study relates to technology and society, the mixed scanning approach was the major theoretical proposition that showed how to implement guardrails for MAS by allowing society's actions to demonstrate trust in decision making through regulatory policy. The realization of trust in MAS's decision-making process was made evident as a tool through policymaking operations. In that regard, participants were asked two questions in an interview to find the common challenge. The information obtained from MST was used to evaluate participants' experiences, judge and provide a logical step for a policy solution. Like Etzioni, the rational and incremental approach fulfills educational purposes and business decisions because rational decision making takes a scientific approach based on evidence, and the total process is judged, providing a higher commitment. This MST approach demonstrates a course of action that can produce an effective outcome that benefits society because trust is essential and is required to validate the data presented by MAS.

Furthermore, MST is suitable for public policy which can bring about social change because the objective is governmental action to attain a trusting result. In that

regard, this policy framework aims to ensure trust's validity in MAS decision-making processes. By allowing a policy to draw on how it is represented, the educational technique and the implementation of the procedure can produce realistic objectives that translate into a reliable program. Rossi (2019) supported this theoretical position by stating that the convergence of improved algorithms, vast computing power, and massive amounts of data is what computer users rely upon on the internet; having no guardrails to protect society is devastating. Rossi concluded that algorithms, computing power, and extensive data make deploying artificial intelligence systems in highly uncertain real-life scenarios possible. Computer users were willing to trust technology in the past; however, today, computer technology with updates, malware, AI applications, etc., presents severe social concerns. Therefore, the need for public policy ensures that computer users are given an open and specific choice.

Adamson (2018) stated that a technical challenge for developing AI technologies is the societal question of trust and proposed that one method for developing trust is to create a specific area of AI. In that regard, MAS is the area of AI that I selected to demonstrate how to accomplish the evidence of trust while undertaking a policy design. Considering that trust in decision making and public policy initiatives are actively discussed by Senator Schumer. Actually, Schumer has leveraged primary policy goals with the direction of other expert information technology (IT) decision makers to ensure trust through private–public partnerships. Still, more needs to be done because computer users' behavioral norms are advanced by technology. That said, considering the advancement and interaction with individuals, the ways and means for evaluating alternative solutions with

algorithmic designers are yet to be fulfilled in future studies. Because of this understanding, this framework provides how policymaking addresses the naturally occurring context, process, action, and interaction by a tool explained in Chapter 2.

Given that the conditioning of citizens is the rational expectation that supports behavior norms, MST is logical for public policy. Also, avoiding policy guardrails removes the protection or security tools computer users need for trust. Further, the process requires the decision makers to be vetted and registered as agents so that the algorithmic designers for MAS demonstrate rational and planning abilities. Understanding rational and incremental decision making requires minimizing risk, bias, uncertainty, and secrecy when trust is incorporated as a tool to avoid controversies and consequences.

Nature of Study

The methodological approach used in this study is generic qualitative inquiry grounded by the work of Bilal et al. (2020) and Dorri et al. (2018). Generic qualitative inquiry research, designed by Caelli et al. (2003), defines a phenomenon or situation being investigated. Also, Kostere and Kostere (2022) stated that generic qualitative inquiry supports the need to discover and understand a phenomenon. Accordingly, this study found meaning through data collected from 10 participants recruited from social media, LinkedIn, and the Walden University Participant Pool to understand a trust phenomenon. Participants were online students of different ages and with different experiences. The sampling method was random to offer an equal chance of being chosen.

Before being chosen, the 10 participants demonstrated their understanding of the principles and challenges of MAS and open distribution systems. As Kostere and Kostere

(2022) stated, purposeful sampling recruits are participants with experience in the inquiry to illuminate and interpret meanings of the phenomenon. Therefore, saturation was reached when new ideas for answering the research questions were unlikely to emerge. Online students received an invitation letter and survey questions to establish they met the participation criteria. Upon answering the questionnaire, 10 participants were given an informed consent form before answering 10 interview questions via the telephone. After answering the interview questions, the participants received a thank-you letter. The data collected were used to answer the two research questions.

Further, in the study, I used Delve coding to perform and apply codes that identify the common themes or concepts to allow for interpretation, leading to research findings. Saldana (2016) also stated that Delve will enable a researcher to explore emotions, values, conflicts, and judgment. As a result, utilizing participants' perceptions helped to develop a regulatory framework where trust in the decision-making process of MAS was made evident.

Definitions

Agent: An entity placed in an environment and senses different parameters that are used to decide based on the goal of the entity. The entity performs the necessary action on the environment based on this decision (Dorri et al., 2018).

Algorithms: A sequence of steps that describe how a problem can be solved. It is a set of self-contained sequences of instructions or actions that contains finite space or sequence and will give a result to a specific problem in a finite amount of time (Constant, 2021).

Artificial intelligence (AI): A variety of disciplines including language simulation, neuron nets, complexity theory that clarify and develop concepts around the field of *thinking machines* that included cybernetics, automata theory and complex information processing (Marr, 2018).

Automated agents: Autonomous agents are based on the amount of adaptation, learning, and decision making integrated into the system (Totman, 2019).

Autonomous agents: Requires actions that stated computational entities decide and execute in response to environmental conditions (Wellman & Rajan, 2017).

Autonomy: Each agent can independently execute the decision-making process and take appropriate action (Dorri et al., 2018).

Environment: The place where the agent is located and monitored. When the agent is monitoring the actions of software components, the agent uses the information sensed from the environment for decision making (Wellman & Rajan, 2017).

Ethical design: The concept that designers have responsibility for their development technology (Miller, 2023).

Mind mapping: A visual thinking tool that helps to structure information to better analyze, comprehend, synthesize, recall, and generate new ideas (Winda, 2022).

Purposeful sampling: The sampling strategy used in the generic qualitative approach and is a means for recruiting participants who have had the experience under inquiry and are willing to describe their experience (Kostere & Kostere's, 2022).

Thematic analysis: A method for interpreting qualitative data that draws meaning from recurring patterns and themes in the data (Dlugatch et al., 2024).

Trust: A means of reducing uncertainty in cyberspace by developing and implementing security systems (Dorri et al., 2018).

Trustworthy: Showing genuine interest in others and knowing the importance of nourishing relationships (Dorri et al., 2018).

Assumptions

This qualitative study began with an assumption that trust is lacking in the MAS decision-making process. I also assumed that the participants could share their experiences to provide insight into how trust was made evident. MAS automation application is a complex system with the ability and properties for corrective techniques, which gives a perceived trustworthiness that MAS can make informed and grounded decisions. For this reason, it is necessary to clarify the transparency of trust in the decision-making process of MAS so that users can have information on how to audit, verify, and monitor trust. Critical to this study are the social choices and interdisciplinary information for data analysis of the automatic algorithmic decision-making process. Technology has advanced the assumption, and this study is being conducted because past mistakes will likely be perpetuated in a new way. For example, there is intentional discriminatory treatment, as Tambou and Tsoukias (2023) stated, which explains why the assumption is chosen in the study context.

Given that AI applications in decision making reinforce bias unknown to computer users, the response cannot be trustworthy unless there is evidence of trust. According to Cooper (2012), the public should require an additional and more rigorous set of standards and constraints associated with public trust. In that regard, it is crucial to understand the

level of uncertainty and risk when there are no guardrails. However, it is noteworthy how computer users find themselves muted and vulnerable in a complex system without someone monitoring or imposing some constraints.

Furthermore, computer users have become spectators in the decision-making process of MAS rather than thinkers or participants. Although MAS applications have a corrective solution to a problem, holistically, the problem must be a specified action that projects situation awareness or else the platform environment perpetuates a belief of trustworthiness. This spurious act exposes computer users to bad faith in the decision-making process and raises concerns for discussions about why the search engine environment does not allow an evidence and verification technology tool in the decision-making process. Addressing this assumption is a positive social change vested in managing the safety of the decision-making environment for an audited, verified, and monitored outcome. Using this descriptive and theoretical framework to address the meaning individuals ascribe to this social problem shows the epistemic knowledge associated with technological skepticism.

Scope and Delimitations

The scope of this study was limited to exploring the role trust plays in the MAS decision-making process to determine how regulatory policy or a mind-mapping tool could bring about support for the common good. The study aimed to develop an understanding of trust in trustworthy agents. Guba and Lincoln's (1994) trustworthy evaluation provided ontological authenticity by constructing trust through a unique opportunity. As a result, this research extended within the scope and sample size.

The target population that set the boundary for this study were online universities, with some students having general technology knowledge and others more specific knowledge. Because much of the research on decision making is limited to ethnography, this generic qualitative inquiry study focused on the group's collective experiences, as Creswell (2013) stated. Generic qualitative inquiry allowed this study to show if trust matters at three different levels in the decision-making processes. The samples helped learn how the AI algorithm is similar in adjusting to the different levels because it is a self-interest application. As Jordan (2019) stated, AI has been limited, and human imitative AI aspirations must be realized.

Further, Etzioni (1968) stated that decision making by agents cannot evaluate alternative agents because of the unrealistic action of the agents. Because MAS is specific to this research, the limited capacity to foster decisions is yet to be studied. Still, users need to know the AI settings, preferences, and properties agents use. Keep in mind, conflicting preferences with agents are possible. Therefore, the delimitation in this study relates to the constraints of the mind-mapping tool, which requires structuring information that is audited, verified, and monitored visually for a better understanding of the subject.

Another delimiting factor of the study is enrolling the participants because of the limited research on the subject matter and the limiting focus on the complexity of AI and algorithms; therefore, managing trust in decision making proved more difficult. As explained in the purpose statement, this generalized study intended to demonstrate the need for awareness of MAS technology and to provide computer users with subjective experiences and perspectives concerning trust in MAS. The specific requirements of the

participants include the fact that no friends or family participated in the study. Also, the study's results were triangulated with similar research, transferred, and generalized to similar settings.

Limitations

There are limitations to the methodology and design of this study. Creswell (2013) stated that qualitative research aims to achieve the best possible understanding and deep knowledge of a phenomenon. Accordingly, this study explained why trust is needed in MAS decision-making processes and how policy regulations fit MAS as a trusted tool. Given that technology governs most of life, it is a basis that can influence the study outcome because computer users are vulnerable and are at risk to technology design and programming. As a result of this limitation, it has become difficult for researchers to stay neutral. Still, I ensured validity and reliability by using reflexivity to maintain an open mind. O'Neill (2002) stated that transparency destroys secrecy, which limits the deliberate misinformation that undermines relations of trust in the open distribution system. The sample size was also limited to 10 participants, which could also influence the study.

Significance of Study

The lack of trust in MAS decision-making processes has been an item for discussion among corporate heads of AI. These decision makers met to collaborate and decide how AI could elaborate on the trust problem. As a result, the tech meetings advanced the knowledge in public policy because some progress was made when President Biden issued a new executive order on artificial intelligence. Based on the order, the U.S. government's first action required new safety assessments, equity, civil rights

guidance, and research on AI's impact on the labor market. Further, White House Deputy Chief of Staff Bruce Reed represented that the president's order is "the strongest set of actions any government in the world has ever taken on AI safety, security, and trust" (Field and Feiner (2023), p.3). In light of this, computer users can change their behavior because companies adopt better data and analytics strategies simultaneously, promoting social change.

Sivan-Sevilla (2023) noted that crowdsourcing is one of the advanced practices regarding AI that hold regulators accountable. The author noted that the General Data Protection Regulation (GDPR) has a hub repository of related decisions and knowledge, updated by the public, and monitors more than 100 relevant web pages across European states. Also, an initiative from researchers at the University of Iowa, called GDPRxiv, is an automated information archive system that collects and curates GDPR rulings, judgments, reports, and official guidance. Sivan-Sevilla says these tools are advanced practices that surface blind spots and enforcement deficits and trace their improvements over time.

More importantly, cases where violations of federal laws regulate the conduct and organization of businesses to promote competition are a step toward concrete regulation. For example, a 2023 antitrust lawsuit filed by the U.S. Department of Justice alleges that Google monopolized digital advertising technologies and forced publishers and advertisers to adopt the company's tools. Google agreed to pay nearly \$400 million for breaking consumer protection laws. Buchanan (2017) noted that seeking regulatory reforms,

transparency, and revitalization, as the study shows, can identify what creates public trust and positive social change outcomes.

Many researchers have studied trust; however, MST has not been used as a framework to explore this phenomenon. MST is an incremental decision process that provides for rational decision making and policymaking. Therefore, MST is significant for this study because it offers a different lens through which to explore the phenomenon. This study builds on the roles and expectations of multiagents and computer users regarding MAS decision making; it points out the juxtaposition in which computer users find themselves. As Korovin et al. (2019) stated, AI applications impose specific requirements on system architecture, which organizes data storage and provides access to software modules, creating a complex situation for computer users. As practices advance and positive social change occurs, computer users should be able to trust technology because they are aware of the role data plays in decision making, placing computer users in a significant position.

Summary

Chapter 1 outlined the research problem and purpose of the study, along with the background and nature of the study. The main point of this study was to fill a gap in the research by interviewing students and graduates. The study helps explain how this research can lead to positive social change.

MAS consists of autonomous entities known as agents. Because much is still being determined about the experience computer users have with AI, it is difficult to determine how agents make decisions and whether it matters to computer users or whether the

agent's interaction is trustworthy. As a result, consideration was given to the policy regulations paradigm. Also, the study framework provided the tools necessary for the discovery because trust is a value judgment that rests on how computer users view the experience of the decision-making process of MAS. Chapter 2 includes a literature review that provides a historical foundation of computer users' relationships with MAS and their confidence about the technology and whether trust matters. The literature review also covers background information to address policymaker progress.

Chapter 2: Literature Review

Introduction

Although computers can dominate life, this research was conducted to explore how to trust the decision-making process of MAS, an artificial intelligence application, mainly when there are no guardrails or regulations to manage the system. In that regard, additional qualitative research is needed to understand the phenomenon because it is current, relevant, and significant for this discipline. Public policy articles include studies on rational decision making by AI. Richards et al. (2021) noted that consensus is forming around the need for a more evident record of the increasing use of AI systems and applications in high-stakes decision making. Richards et al. underscored the importance and significance of transparent reporting mechanisms. For example, AI applications such as ChatGPT, Bing AI, Chatbot AI, Chat Sonic, and Bard by Google all generate responses from the internet without a trusted tool.

Furthermore, Adamson (2018) noted that a precautions-based approach to trust may also be relevant in national initiatives to develop AI because the decision is partially opaque. As a result, Adamson stated that all countries must be prepared to control the risk of AI going awry because no national initiative has been developed for AI. Obscurity is not progress. Therefore, a policy should be put in place that is social practice and not a singular or isolated event.

Previous research from Dorri et al. (2018) stated that agents acquire information or knowledge for the decision-making process from neighboring agents or the environment, making an agent vulnerable to malicious entities that may share falsified data to impact

the decision. Rajan and Dharani (2017) noted that agents imitate the decision-making ability of human knowledge while acting in an environment to achieve goals. Shahrddar et al. (2018) added that decision support systems are in place for specific critical programs, such as the stock market and other targeted markets where vital decisions are made, making trust essential. However, current research from Miller (2021) stated that the algorithm's decisions or results affect the individual and society. Also, Sivan-Sevilla (2023) addressed the decision-making process from a public policy perspective and stated that well-designed policies alone cannot prevent social harm from new technologies. Instead, watchdogs must have tools to scrutinize how such policies are implemented, paving the road for digital accountability.

Adriaans (2020) and others provided current relevance showing how technology is pivotal to society and science. However, when the community is without guardrails or regulations, it is left to the decision makers' whims, which would be difficult for society to trust because there are no criteria to meet. Rossi (2019) added that there is a need for strong collaboration with policymakers and regulators on autonomous entities because prior academic work focused on approach, engineering, and contract (see Cheng et al., 2019; Dorri et al., 2018; Fagbola & Thakur, 2019; Miller, 2021; Samuel et al., 2020; Villadiego, 2020; Wellman & Rajan, 2017). However, Adamson (2018) stated that alongside the technical challenges of developing AI technologies sit the societal question of trust, which is primarily the focus of this study. Kraus et al. (2019) added that focusing on finding ways of explaining to a user how an AI system decides is more critical in multiagent environments. In that regard, the trust gap is a relational problem and is

relevant to this study because not knowing how decisions are made can impact the daily life of everyone using a computer.

MAS has its corrective preferences that involve a course of action to find a solution, compromising safety if the information is not correctly defined. Dorri et al. (2018) stated that users must know that the algorithm design consists of autonomous agents with an inherent ability to learn and make independent decisions. As Miller (2021) noted, the algorithm is a repeatable process, and the outcome is based on data. Agents must be vetted because they can come and go from the environment. As a result, MAS faces challenges that include coordination between agents, security, and task allocation. Because the public does not know the limitations of MAS, the system fails to be defended. In that regard, this research demonstrates how individuals face an untrustworthy position, which makes safety, policy, and regulation in decision-making management a priority.

Further, Dorri et al. (2018) stated that the challenges MAS present require further studies because technological advancements have taken on a social role, making people vulnerable in ways that challenge their epistemic capacity. In that regard, MAS applications contribute to individuals' competency deficits. What prevails is the responsibility of policymakers and the makers of MAS applications to satisfy the evidence of trust held by computer users while implementing the actual providence of the technology.

The purpose of this generic qualitative inquiry was to explore how concerned computer users are with the decision-making process of MAS and whether a policy-making rule for decisions can protect the public interest. Building on the extensive work

done by Dorri et al. (2018) and Rossi (2019), this study intends to show how AI techniques rely on vast amounts of data, algorithmic commands, how the data are handled by AI and by those who produce them are without trust.

As Adamson (2018) noted, an AI programmer can reflect their own assumptions in an algorithm, making trust in this uncertain situation significant. Marr (2018) stated that IBM, humans, and machines across the globe create 2.5 quintillion bytes of new data daily. Faught (2023) stated that with all that data mining comes a need for public policy and decision making to keep pace with the rapid advancement of technology. As a result, the findings in this study can provide a policy that establishes evidence of trust. While this interpretivism paradigm emphasizes an action based on user experience, it intends to demonstrate how policy regulation can pave the way for trust. Keep in mind that this phenomenon proposes an epistemological question regarding the existence of trust in the decision-making process, which generic qualitative inquiry assisted in discovering.

Bellamy (2016) stated that with generic qualitative inquiry samples, individuals can determine what works best in each situation. For example, one can draw on a single approach by combining several qualitative methods. However, it can deviate from the intent, guidelines, or rules in a way that may benefit the study or does not adhere to any recognized qualitative approach. As a result, this study explored how technology operates without consequences and demonstrates the need for policy to bridge the gap between computer science and public policy. Sivan-Sevilla (2023) stated that in 2022 alone, nine AI-related U.S. federal laws and 21 state-level laws were passed to limit threats caused by AI. While these laws help to explain the trust issue from an epistemic inquiry, these laws

are also technological policies that help to protect society and the need to track policy compliance.

Further, current literature based on programs and algorithms relevant to this study establishes how the computer performs a task. Wellman and Rajan (2017) addressed how autonomous agents operate with a narrow scope of competence. Miller (2021) addressed the unconscious impact in the algorithms process, creating grave security risks of AI capability impacts in decision making. Kipyego's (2016) research noted that trust has yet to be kept within open systems, and users have the burden of safety and security rather than the technology algorithmic protocol that could control the agents' behavior. Dorri et al. (2018) provided a thorough understanding of distributed artificial intelligence and algorithm architecture.

This insightful work explained how agents collaborated, learned, and made autonomous decisions in the environment, including coordination between agents, security, and task allocation. Wellman and Rajan (2017) explored the ethical boundaries for autonomous agents. They noted that the boundaries would require the decision makers to design an algorithm that regulates behavior that requires the agents to comply (Wellman & Rajan, 2017). Rajan and Dharani (2017) noted that the inference engine algorithm or rule set acts as the automated reasoning system to evaluate the current knowledge base scenario and apply the rules relevant to the assertion. Also, Boddington et al. (2017) addressed the consequences of ignorance and the injustice of algorithm-led decision making that can produce public fear.

Because the study examined how regulatory policies can establish guardrails for MAS, Sivan-Sevilla (2023) noted that, over the years, innovation scholars Gary Marchant and Wendell Wallach have called for the creation of government coordination committees to design policies for fast-moving technologies. Herian and Neal (2016) stated that multiple agencies collaborate to tackle public problems, and MAS needs to represent public trust. Also, Bromley-Trujillo (2019) addressed the significance of science and its relevance to public policy and illustrated the values-based nature of scientific policy decisions. Ranerup and Henriksen's (2019) study revealed how citizen trust versus the lack of transparency in social service delivery is the setting for government accountability.

The major sections of this chapter, along with the introduction, include the literature search strategy, theoretical foundations, literature review related to critical variables, summary, and conclusion

Literature Search Strategy

Literature was retrieved from databases and search engines found in the Walden University Library: Academic Search, ACM Computing Surveys, IEEE, International Journal of Artificial Intelligence & Applications, International Journal of Information Engineering, University of Nebraska Public Policy Center, ResearchGate. Computers and Applied Science Complete, ProQuest Central, EBSCO, SAGE Premier, and Science Direct. The keywords for searches were *autonomous agencies*, *decision-making*, *decision theory*, *distributed infrastructure*, *trust*, *trustworthiness*, *multi-agents*, *algorithm*, *artificial intelligence*, *mixed scanning theory*, and *public policy*.

The iterative search process and the terms used in the various databases are as follows: trust and decision making, ResearchGate; artificial intelligence and algorithm, Google Scholar; theory in decision making, EBSCO, SAGE Premier; and policy and regulations, University of Nebraska Public Policy Center, Sage, and Walden University dissertations. For example, Gong (2022) noted that an agent's optimal behavior is viewed as inexplicable due to biased belief, leading to degraded performance and loss of trust. Still, in cases where there is little current research and few (if any) dissertations and conference proceedings, this process was handled by reading the research endnotes, contacting the librarian, accessing the topic, and recommending further development in the area of study.

Theoretical Foundation

Mixed Scanning Theory

Amitai Etzioni's (1978) MST guides research into rational decision-making and policymaking processes according to Walden University (n.d.) to establish the primary policy goals and direction. The approach studied in MST includes rational and incremental elements because it provides more than two levels of detail and coverage. This process allows fundamental decisions made by incremental ones to explore the main alternatives the actor sees, given the conception of the goal. Unlike rationalism, the details and specifications are omitted to make an overview feasible because both incremental and rational decisions in MST help to reduce any shortcomings of the other. In other words, incrementalism reduces the unrealistic aspects of rationalism by limiting the details

required, so rationalism overcame the incrementalism slant by exploring alternatives, producing MST.

Furthermore, Dubey and Patil (2021) used MST to study city planning to show the migration of people from rural to urban areas in search of employment. Dubey and Patil noted that the rational model needed help to acquire accurate information to make decisions fair. As a result, Dubey and Patil found that the rational approach had its own limitations. Further study was conducted on the incremental approach to planning. Dubey and Patil noted that rationalistic decision making requires more significant resources, and an incremental approach neglects various aspects, giving rise to MST.

The MST theoretical explanation for the phenomenon relating to this study is used because of the recent increase in AI that created uncertainty and biases among computer users, which are challenging to fix. Brown et al. (2016) explained trust as an essential variable in the effective use of automated tools and as a form of automated agents. The author's exploratory study on trust indicated that trust increased as automation increased reliability, but trust was misused or disused. Brown et al. also provided statistical information on the misuse of cybersecurity and the breaches that occurred with the automated agent intrusion detection system. Bilal et al. (2020) stated that privacy threats to trust in emerging technologies can influence unconscious decision making. Therefore, the authors stated that the best approach to solving the trust issue is establishing reasonable regulations under ethics and government (Bilal et al., 2020).

Bilal et al. (2020) noted that vulnerabilities in emerging technologies and the lack of transparent, flexible, and culturally adaptable data protection rules result from the need

for attention to technology development and application. Bilal et al. also stated that the need for more regulations and data ethics increases the difficulty of trusting situations. More importantly, the authors noted that the decision-making process is the outcome of character dispositions and habits and pointed out that users, as nonparticipants in the relationship with technology, have cultivated a lack of dispositions and habits of a virtuous person. As a result, delineating the assumption appropriate to applying theory rests on how rational decision-making and policymaking processes can meet the goal of developing a decision-making tool.

History of Mixed Scanning Theory

Encouraging the acceptance of a tool by those responsible for carrying out tasks on the open distributed system should require the decision makers to be vetted and registered as agents of the algorithmic designers for the MAS. Dias et al. (2020) showed how development in support of tools has previously applied the theory and the technical implementation synergies needed to facilitate the tools. The methodologies Dias et al. modeled created a way to support users in decision-making synergy implication. When analyzing the technical feasibility of synergy, compliance, and the necessary steps, the study provided a final technical viability assessment to support the decision making of technology selection and synergy implementation.

Also, Torres (2021) conducted three participatory technology assessments on the lack of public participation in science and technology, which produced an outcome showing undemocratic decision-making processes. Regarding the technology aspect of the policy study, Torres noted that the American federal bureaucracy was structured by

designing, adopting, and implementing conditions to shape the bureaucratic contexts of public participation in science and technology decision making. In other words, the government facilitates the way the technology platform reacts to computer users through decision making. In this regard, Torres stated that innovative forms of public participation in technology program design and decision-making processes must be anticipated or offered.

Accordingly, the rationale for choosing MST is related to the need for more understanding of MAS. Dorri et al. (2018) noted that the taxonomy for handling complex computing problems classified MAS as an AI agent developing parallel algorithms, languages, and architectures for increased efficiency. MAS is an autonomous agent that decides on an action based on its goals, creating room for uncertainty. MAS has its own corrective feature, and the agents are not vetted; more importantly, the agents can come and go from the environment, which creates a trust issue and biases that can come from the algorithm. Together, these factors relate to the challenge and MST and provide the best option to pursue my goal of a policy and technology tool regarding trust in the decision-making process of the distributed infrastructure, causing the intelligent agent applications to become a study.

Literature Review

Historical Context: Multi-Agent System and AI Application

Dorodchi et al. (2016) stated that trust is a critical factor when dealing with distributed systems, and trust must consider all stages of system development. Further, Kipyego (2016) noted that trust has yet to be kept within open systems, and users are

burdened with safety and security rather than the technology algorithmic protocol that could control the agents' behavior. Kipyego also noted that technology makers need to go further to provide users with the rest of the assurance that they can trust the system.

In that regard, Cabral (2016) explored the decision-making process that guides selecting projects in a portfolio by including the technology acceptance model (TAM) evaluation concept that could predict user acceptance of information. Cabral noted that Davis (1989), the developer of TAM, explains and predicts the behavior of individuals associated with the acceptance of new technology. This study utilizes the TAM method to measure users' perceived behavior. The acceptance of information systems results from a response to external stimuli related to the systems' features that motivate users to adopt the system. TAM research adds consideration and is appropriate for validation purposes and examination of trust in MAS.

Brown et al. (2016) explained trust as an essential variable in the effective use of automated tools, a form of automated agents. The author's exploratory study on trust indicated that trust increased as automation increased in reliability, but is trust misused or disused? Brown et al. also provided statistical information on the misuse of cybersecurity and the breaches that occurred with the automated agent intrusion detection system. More importantly, the authors concluded that future research on security decision-making should be conducted despite their findings.

Herian and Neal (2016) examined the cross-disciplinary approach to building trust. In this study, the authors defined and measured trust in various disciplines and found differences because of the methodological approach. Herian and Neil's research dealt with

collaboration across disciplines, which attempts to improve understanding of the decision-making process with MAS. Given that multi-agent is a collaborative process where an agent executes the decision, it causes users to perceive a level of trust that the user accepts. Herian and Neal's study demonstrates that trust can emerge from a perceptive need stemming from the domain. Therefore, trust evoked was constructed from an expectation where users perceive they exercise trust. As a result, this perceived trust relationship is executed by a single agent but guided by multi-agents within and across domains. Users need to learn what is driving the trust they perceive. Still, assessing if users feel trust is necessary was revealed in this study by showing how relevant and critical the trust level is in the decision-making process rather than accepting the perception of trust.

Evidence and Analysis for Trust in MAS

Anyoha (2017) stated that by the first half of the 20th century, artificial intelligence began with the heartless Tin Man from *The Wizard of Oz* and continued with the humanoid robot. However, Anyoha noted that by 1980, Edward Feigenbaum had introduced expert systems that mimicked human decision-making. Today, AI is everywhere, collaborating with other agents on complex issues without regulations or guardrails. Hence, this public policy study regarding trust in the decision-making process of MAS, which Buchanan (2017) explored, provided a way to seek regulatory reforms, improve transparency, and revitalize public trust as positive social change outcomes.

Newman (2017), speaking on the government's role in developing and using artificial intelligence, said nefarious challenges come with decision-making and urged the

government to adopt a neutral stance towards all players and platforms to keep the public informed and educated. While there is controversy over the decision-making in machine learning, AI changes are occurring for the greater good. Rajan and Dharani (2017), which has since given security professionals the need to focus on information leakage, stated that AI could imitate the decision-making ability of human knowledge because it comprises a knowledge base and an inference engine.

Further investigation of AI's historical development made it apparent that there is more than one successful approach. Adamson (2018) stated that it is more than 200 years since Mary Shelley speculated about creating artificial humans based on biological sciences. However, Adamson noted that in 1948, Norbert Wiener introduced many of the subsequent themes and debates of AI and noted that in 1950, Alan Turing published *Computing Machinery and Intelligence*. These origins of AI provided a path through MIT in 1965, where mathematical logic, statistics, probabilities, computational neurobiology, and computer science imitated human beings' cognitive abilities. Estrada (2023) stated that in the 1940s, the computer (hardware) and manual programming (software) were created to intercept encrypted code messages from the German Nazi and the Imperial Japanese Navy to prevent an attack on large cargo ships that supplied goods to the United Kingdom from the United States. Estrada also noted that Alan Turing, the father of AI, constructed a mechanical electric computer called Enigma along with the first theoretical framework of a manual algorithm during the critical times of World War 2. The progression of AI opened up a new era for Dartmouth College and CALTECH, which held

conferences on AI in 1948. However, given the influence of AI today, policy modeling presents challenges and impacts public policy opportunities.

Dorri et al. (2018) noted that the taxonomy for handling complex computing problems classified MAS as an AI agent that develops parallel algorithms, languages, and architectures for increased efficiency. Because MAS is an autonomous agent that decides on an action based on its goals, MAS creates room for uncertainty. Adding to past studies, AI, with its augmented human capabilities grounded in decision-making, acts on the environment, which Rossi (2019) stated has a high degree of uncertainty in learning and security. As a result, the distributed nature of problem solving adopted by MAS rests on a decision support system based on the data reserve, creating a trust issue. The researcher provides a greater understanding of this trust study, and the research questions intend to help shape, define, and design new knowledge on trust in the decision making of the MAS application. Overall, the study provides a way of thinking of trust by building on proper representation, education, and implementation for automated agent decision making to help close the trust gap.

Also, Adamson (2018) proposed developing trust from unintended consequences of decision-making abilities, algorithm capabilities, and risk. The author examined the relationship between science and technology to consider trust. Kraus et al. (2019) added that focusing on finding ways of explaining to a user how an AI system decides is more critical in multiagent environments. Brown et al. (2016) explained trust as an essential variable in the effective use of automated tools, a form of automated agents.

Marsh (2018) explored various theories in information technology related to the acceleration and proliferation of technological communication. Marsh noted that internet development relates to causes and impacts that have gone unnoticed, and philosophers, sociologists, psychologists, and other human scientists have yet to examine the ethics, causes, and impact of the phenomena surrounding information technology developments such as trust. Investigating the distrust of the MAS application decision-making process allows technology to bring about social change and provide safe interaction with society. As Marsh stated, it is time to develop a philosophical position surrounding information technology and not leave this to future generations.

Shahrdari et al. (2019) addressed the trusted measurement autonomously in the system's evolution and noted that trust evolved when the decision support systems were used, which makes trust a critical factor. Menezes and Nojournian (2019) also referred to the limited research on this subject. They noted that trust management is critical for developing future artificial intelligence technologies and raised concerns about the abuse of technology. Irzik and Kurtulmus (2021) analyzed the public as having warranted epistemic trust in science as the conditions under which the public may have well-placed trust in the scientists as information providers.

Regulating AI

Generating information from sources related to this study provides an opportunity to synthesize information and create a comprehensive outcome. In that regard, Richards et al. (2021) stated that artificial intelligence models and services are used in a growing number of high-stakes areas, and a consensus is forming around the need for a more

evident record of how these models and services are developed to increase trust. Also, Herian and Neal (2016) noted that multiple agencies collaborate to tackle public problems, so MAS needs to represent public trust.

AI started more than 60 years ago, according to Rossi (2019), but enlightening the public on how AI applications operate has been a challenge. When AI is given a task requiring human intelligence, Rossi says finding a correct solution is using rules, logic, symbols, data analysis, or correlations to solve problems based on possible scenarios. Although that is the case, the need to activate the models and services can only be done by humans. Therefore, AI developers must recognize a complementary relationship between humans and AI. According to Rossi, not being transparent encourages the abundance of bias metrics, the notion of fairness, bias mitigation, and detection algorithms. However, trust remains obscure. Chen (2023) stated that machine learning models play a critical role in decision-making scenarios, making and explaining the essentials of building a model humans can trust.

Further, Yarali et al. (2020) stated that automated systems such as MAS with correcting capabilities operate without users knowing the system's challenges and present risks to users. The author also noted that extra measures such as regulatory compliance, ethical and social responsibility guidelines, and positive social change are needed to overcome unforeseen circumstances. Further, Villafranco (2020) addresses the issue of self-regulation within the AI space for example, from cutting-edge legal considerations to ethical, social, and moral challenges by examining the social implications of data use, Villafranco concentrates on existing regulatory regimes regarding privacy and consumer

harm and the potential for self-regulation. Villafranco highlights the need to move quickly as artificial intelligence and machine learning become more ubiquitous throughout society.

Although AI has cornered the technology market, it must be made clear that few laws are applied to the AI market, so understanding where negligence and responsibility lie remains to be determined. Given this growing consensus about AI's models, applications, and services, MAS continues collaborating, coordinating, and negotiating while citizens must be humbler about MAS's decision-making process. Public policy and regulation allow citizens to handle uncertainties, biases, and risks because decision makers need to establish trust.

Policy, Regulation, and Compliance

When taken together, what remains to study is policy regulations and compliance. Torres (2021) conducted three participatory technology assessments regarding the lack of public participation in science and technology, producing an outcome showing undemocratic decision-making processes. Additionally, Rossi (2019) questions if such powerful technology could make important decisions in ways that humans perceived as fair. Because being aware of and aligning to human values relevant to the problem being tackled, then technology must have the capability to explain its reasoning and decision-making. Further, Bilal et al. (2020) stated that the lack of regulations and data ethics increases the difficulty of trusting situations. Moreover, Miller (2021) said that standards and policy guidelines should be used to build consensus and provide an understanding of the relevant issues, such as algorithmic transparency, accountability, fairness, and ethical use. Given this knowledge, policymakers must develop an infrastructure through

representation, education, and implementation management to show how to trust MAS's decision-making process.

Many researchers approach this problem very openly, given AI's strength in data gathering, handling complex tasks, having its own resolve, along with the future in technology, has its advantages. However, some weaknesses must be addressed because of the great uncertainty, risk, and bias when there is no representation, education, or implementation of the decision-making process, and it should be noticed. Given that there is no vetting of the agents, making them accessible to come and go. As agents sit in the environment with their own goals, they make harmful and beneficial decisions because they operate by an algorithmic system. As a result, when trust is lacking, the decision will be impeded.

The rationale for selecting the variables is to bring balance to the responses. In that regard, Creswell (2013) stated that much of the research on decision-making is limited to groups with collective experiences. Buchman (2017) said that an informed user would better judge the decision-making autonomy because of the interaction and vigilance in monitoring risk. Further, Miller (2022) stated that the interaction between trust and algorithmic features influences user satisfaction. Miller noted that the end user's confidence in and understanding of the system is an essential success factor that impacts decision quality. Cooper (2012) added that MAS's obligation must be accountable for convincing society that trust between the user and MAS, in terms of a relationship, is carried out.

Rational expectations that underpin behavior and norms shape and condition citizens. Fundamental to this rationale is trusting the decision-making process of MAS. However, the representation of MAS, how it educates individuals, and how it implements the applications have yet to be made clear; it is a reinforced behavior that has become a norm. Because trust is the primary goal of this research and AI is the decision-support system for solving complex problems, investigating the algorithmic design for MAS must be considered because of its significant contribution to the decision-making process. In that regard, MAS needs to set policy guardrails to establish operations boundaries and provide trustworthy information for AI to make better predictions. In that regard, MST could facilitate this constructive process. Also, using the GST answers shows how concerned individuals are and why trust matters in decision-making.

A theoretical framework sets the benchmark for how and why the selected theory relates to the present study. Due to the complexity and uncertainty of the multi-agent system, this study adopted MST to provide a standard for administering the principles that ensure decision-making in an exceedingly complex setting. With the MST model, Etzioni's (1986) approach combines rational and incremental decision-making with a policymaking process to establish policy goals and directions. As a result, MST can establish trust through a policy guardrail in the MAS decision-making challenge.

The theory relates to this study because it directs how to move beyond the assumption to address the phenomenon. The research questions, the data gathered from the participants, and the literature review address the gap problem and guide the study in finding the proper conclusion. The research questions relate to the challenge because they

seek to lift a standard for computer users. Even though AI is machine-taught, and the data that drives AI's algorithm is biased, using this research question, the author seeks to determine if individuals are aware of the issue of trust in the MAS. Because AI is leveraging the power of technology to solve complex world problems, gathering and interpreting information has become necessary and significant. The researcher collected the responses for evidence to measure their confidence level in trusting the decision-making process of MAS.

Studies related to trust in the decision-making process of MAS demonstrated how prejudicial recycled data is and how biased algorithms are used for decision-making. In that regard, Rossi (2019) raised concern about trust in MAS decision-making and stated there is a need for strong collaboration with policymakers and regulators on autonomous entities. Dorri et al. (2018) explored a comprehensive high-level approach regarding diverse aspects of the multi-agent system. They paid attention to the complex problem multi-agents face with the distributed infrastructure and presented a taxonomy of the application and challenges of multi-agent systems.

The literature and research-based analysis indicate why the theory has been applied previously in ways similar to the current study. MST has been used in many research areas, such as public risk management and decision-making. This paper focuses on decision making and the literature and research-based analysis, in which Tambou and Tsoukias (2023) noted that past wrongs, such as intentional discriminatory treatment, are likely to be perpetuated differently. Tambou and Tsoukias stated that the AI application in the decision-making of MAS reinforces bias, risk, and uncertainty and supports negative

social behavior toward minorities. Also, MacCarthy (2019) stated that similar autonomous agents or automated agents designed to handle complex problems are optional for performing analysis, as in the past, because automated decision systems find patterns in data for the decision-making process. Irzik and Kurtulmus (2021) presented an analysis of their case study to show the realization of warranted epistemic public trust in science requiring various societal conditions.

Further, Ranerup and Henriksen (2019) examined a case study of the goals, policies, procedures, and responses to a change in how social assistance is delivered using automated decision-making. Ranerup and Henriksen's study revealed why citizen trust versus lack of transparency in social service delivery is the setting for government accountability. Also, Rossi (2019) stated that there is a need for strong collaboration with policymakers and regulators on autonomous entities because prior academic work focused on approach, engineering, and contract. Together, these studies demonstrate the combining of rational and incremental decision-making and why and how the policymaking process can establish the basis for policy goals and directions. Furthermore, the issue of ensuring people are aware of the applications they rely on for information raises concerns that individuals can no longer rely on obscurity for progress. Instead, individuals must be protected by policy to regulate how they trust the agents operating the future technology.

Conclusions

The major themes in the literature rest on trust in the decision-making process of MAS. Without trust, artificial intelligence stands perplexed. Anyoha (2017) stated that by

1980, Edward Feigenbaum introduced expert systems that mimicked the decision-making process of a human expert. Today, AI is everywhere, collaborating with other agents on complex issues without regulations or guardrails, giving rise to this public policy study on trust.

What is not known about MAS is how decisions are made and how the algorithms are engineered. What determines the sequencing, selection, and iteration of the data raises questions of uncertainty, risks, and biases, requiring the need to protect society. Because it is known that agents interact by coordinating, collaborating, and negotiating with each other and that the agents sit on an open distribution system, consideration must be given to the challenges users face. For example, the likely challenges are malware, cyberattacks, and agents with their agenda, including providing fake news. However, what needs to be known is how to trust the MAS because the agents lack policy regulations.

The transitional material that connects the gap in literature to the methods described in Chapter 3 is the policy and regulatory approach to accomplish evidence of trust in the decision-making process of MAS. While the literature review provided an analysis and synthesis of the study on the need to trust the decision-making process, the gap still exists. Research has shown how the MAS platform enables biases, uncertainty, and risks and compromises the safety of computer users. The platform can develop appropriate policy regulations to help users trust decision-making by representing, educating, and implementing shared guidelines, which Chapter 3 explored.

Introduction

The purpose of this generic qualitative inquiry was to explore how concerned computer users are with the decision-making process of MAS and whether a policy-making rule for decisions can protect the public interest. Building on the extensive work done by Dorri et al. (2018) and Rossi (2019), this study intends to show how AI techniques rely on vast amounts of data, algorithmic commands, how the data are handled by AI and by those who produce them are without trust.

As Adamson (2018) noted, an AI programmer can reflect their own assumptions in an algorithm, making trust in this uncertain situation significant. Marr (2018) stated that IBM, humans, and machines across the globe create 2.5 quintillion bytes of new data daily. Faught (2023) stated that with all that data mining comes a need for public policy and decision making to keep pace with the rapid advancement of technology. As a result, the findings in this study can provide a policy that establishes evidence of trust. While this interpretivism paradigm emphasizes an action based on user experience, it intends to demonstrate how policy regulation can pave the way for trust. Keep in mind that this phenomenon proposes an epistemological question regarding the existence of trust in the decision-making process, which generic qualitative inquiry assisted in discovering.

Bellamy (2016) stated that with generic qualitative inquiry samples, individuals can determine what works best in each situation. For example, one can draw on a single approach by combining several qualitative methods. However, it can deviate from the intent, guidelines, or rules in a way that may benefit the study or does not adhere to any

recognized qualitative approach. As a result, this study explored how technology operates without consequences and demonstrates the need for policy to bridge the gap between computer science and public policy. Sivan-Sevilla (2023) stated that in 2022 alone, nine AI-related U.S. federal laws and 21 state-level laws were passed to limit threats caused by AI. While these laws help to explain the trust issue from an epistemic inquiry, these laws are also technological policies that help to protect society and the need to track policy compliance.

Research Design and Rationale

The research questions guiding this study were:

RQ1: What concerns do students at an online university likely have regarding the decision-making process of an artificial intelligence application using MAS?

RQ2: What concerns do students at online universities likely have about regulatory policies aimed at demonstrating trust in MAS?

Central to this phenomenon is investigating how to trust MAS decision-making process and how the process could help explore the benefits of a policy initiative. This generic qualitative inquiry aims to further Kostere and Kostere's (2022) social science methodology by taking a qualitative stance and using qualitative procedures to demonstrate human experience regarding trust in the decision-making process of AI.

Merriam (1998) stated that a generic qualitative inquiry seeks to discover and understand a phenomenon, a process, or the perspectives and worldviews of the people involved. As a result, this trust phenomenon is defined by stating an expectation, then providing it, and establishing it with a policy initiative.

Understanding trust in decision making and applying guardrails to this phenomenon is central to this study. Knowing if trust matters to individuals establishes how transparent a tool that includes regulatory measures and tech policy compliance can increase accountability, as Sivan-Seville (2023) stated. Also, giving meaning to this qualitative study is the traditional approach to trustworthiness, which Guba and Lincoln (1994) established as the criteria for naturalistic inquiry. Although some studies on MAS include architecture, ethics, and security, there is a need for more literature where trust by regulatory authorities can provide validity.

Traditionally, studies regarding this phenomenon have used qualitative approaches; however, according to Rossi (2019), machine learning does not provide easy access to their decision-making process, so the generic qualitative inquiry could allow a different qualitative perspective. Moreover, the nature of this study and the research questions could allow for further exploration of the participants' responses. A qualitative approach was appropriate because participants' concerns and experiences are drawn upon by talking with them in a natural setting to obtain data. Unlike the qualitative approach, the quantitative approach requires numbers and measurement, and because this study was dealing with autonomous or automated agents, measurements and numbers would not have been suited for the research. Totman (2019) noted that an autonomous agent is based on the amount of adaptation, learning, and decision making integrated into the system. Also, MacCarthy (2019) stated that autonomous agents designed to handle complex problems are optional for performing analysis because autonomous decision systems find patterns in data and algorithmic sequencing for the decision-making process.

The rationale for choosing this traditional approach is to include the belief that policy should be part of this phenomenon. In that regard, a tool should be provided, including regulatory measures and tech policy compliance, to establish trust. Kostere and Kostere (2022) stated that individuals construct reality by interacting with their social worlds. Hence, understanding how individuals' experiences are connected is crucial, as is understanding the meaning and structure of their social and technological contexts. As a result, using generic qualitative inquiry, the study considers an openness to creative and intuitive processes to reflect a perspective. By exploring an understanding of the decision-making process of MAS, trust can be explored based on the detailed descriptions of participants' experiences.

Further, computer users need to be more active and aware of the MAS decision-making process as technology advances. This behavior condones risk for the foreseeable future that could significantly impact society because of bias, uncertainty, and vulnerability. Dorri et al. (2018) stated that the execution of a decision to do something and the belief that a single agent completes the action demonstrates that the fundamental method of solving a task gives the agent the power to execute the decision-making process. This process raises the need for trust. Dorri further stated that trusting an application with an artificial intelligence algorithm designed to solve a specified problem makes this study a critical area to research.

Accordingly, the rationale for this tradition has shown how regulatory measures and tech policy compliance should be in place to avoid foreseeable risk. Also, satisfying the conditions for trust in MAS applications and establishing regulatory policy as a

management tool for trustworthy decisions is a just and fair approach for the greater good of society. The findings of this research should give users assurance and confidence to understand MAS applications' uncertainty, risk, and biases.

Role of the Researcher

In this qualitative research, the role of the researcher is a participant. The researcher gathers and analyzes data, and according to Denzin and Lincoln (2005), it is an intimate relationship between the researcher and what is studied. Miller (2021) emphasized that the role is between responsibility and accountability in getting the job done with transparency in reporting outcomes. Creswell (2013) added that the researcher builds patterns, categories, and themes by organizing data inductively to establish a comprehensive set of themes, which involves collaborating with the participants. Because this study was focused on technology and society, my role, as Creswell says, was to be the instrument of data collection, focusing on the participant and being able to consider the ethical issues that arise.

As the researcher, I had no personal relationship with the participants and zero power or professional influence over any participants. According to Kostere and Kostere (2022), the data collected were described through the lens of the participants, describing their experiences. I remained open to every possibility, showing no power over the participants. Because this study involves human interaction, I managed bias and power relationships by setting aside all preconceived ideas. Kostere and Kostere further stated that a researcher seeks the assurance that the interpretations accurately represent the participants' descriptions of the experiences under inquiry. Also, Ellsworth (2021) noted

that the risk of bias is more significant for those who research social problems. Miller (2021) noted that when a single researcher conducts research, the researcher must ensure that an understanding of the resulting experience is reached. Despite being a social problem study, understanding complexity can lead to biases. However, because of the complexity of MAS, where several agents collaborate, biased algorithms can result. Miller also stated that system configuration may impact the algorithm's outcomes and introduce biases. Despite this, Guba and Lincoln's (1989) techniques and criteria will help remove preconceived ideas and biases.

Furthermore, Dilek et al. (2015) added that addressing ethical issues, including conflicts of interest and perceived power differentials, because technology is rapidly expanding, and specific ethical problems, such as privacy concerns or power issues, may arise. Additionally, this study is irrelevant to my work environment because there are no conflicts of interest, power differentials, or justification for using incentives. As Creswell (2013) stated, participants must be informed that they are participating in a study, the purpose of the study must be explained, and researchers must not engage in deception about the nature of the study. In that regard, this study was conducted to answer the research questions based on collected and analyzed data, which Dorri et al. (2018) stated could provide a broad understanding that supports the basic definitions, research challenges, application domains, and evaluation methodologies.

Methodology

Participant Selection Logic

According to Corbin and Struss (2015), the methodology is a set of principles and procedures for studying some event or fact of social or scientific interest that other researchers can replicate. This generic qualitative study was conducted using data collected from 10 participants who were currently students or graduates at an online university. As part of the participant selection process, three Walden University faculty experts with a background in machine learning, artificial intelligence, automated decision systems, and algorithmic sequencing or working in collaboration with others in those areas were invited by email (see Appendix A) to review the participant interview questions. The interview questions for expert review were structured from Terry's (2022) and Windfont's (2024) participant interview questions (see Appendix B). I made the suggested changes to the interview questions per the faculty experts.

Qualitative research aims to understand an experience. Kostere and Kostere (2022) stated that using purposeful sampling means recruiting participants who have had the experience under inquiry and are willing to describe their experience. In that regard, the participants directly impacting the phenomenon were recruited from social media, LinkedIn, and the Walden University Participant Pool. As Kostere and Kostere noted, the data collected will be sufficiently rich to refine and clarify the experience.

The Walden University Participant Pool system allowed me to post the study under research on its bulletin board. Also, recruitment was conducted through social media and LinkedIn. In that regard, with purposeful sampling, the students met the criteria listed in

the survey questions. The survey draws on the participants' perspectives regarding whether the lack of trust in MAS has shaped, affected, and influenced their abilities. As a result, the demographic survey (Appendix D) considered each participant's age and experience. The survey questions were emailed to participants, and upon completion they were returned to the researcher. Windfront (2024) stated that based on the number of responses to participant invitations, the study must focus on selecting and accepting the first qualified 10 participants to fulfill the phenomenon of the research study.

The selected participants received an invitation letter by email informing them that they had met the criteria for the study (see Appendix C). Martínez et al. (2016) stated that the target population corresponds to the entire set of subjects whose characteristics interest the researcher. The selected participants were told the purpose of the study and were given an informed consent form stating that this study was entirely voluntary. In that regard, the recruited students or former online graduates were interviewed via the telephone using the interview questions, and each interview lasted approximately 15-30 minutes.

The total number of participants for this study was 10 students or graduates. As Brown et al. (2016) stated, projects are constrained by time and budget, limiting the availability of people. Adamson (2018) also noted that there should be scrutiny of precautions because when undertaking research, there is limited knowledge; therefore, limiting the students would help to manage unintended consequences. The study investigated and analyzed concerns that students or graduates at online universities have about the decision-making process of an artificial intelligence application. Also, the

research sought to determine what concerns online university students or graduates have about regulatory policies aimed at demonstrating trust in MAS.

The rationale for the 10 participants is to limit any chance of errors while avoiding making the study unnecessary. Moreover, the study recruited 10 participants because that amount fell within the 10-15 maximum participant saturation or redundancy range. In that regard, trust through this socially constructed method allows MAS to show why collective views based on the users' experiences and perspectives can develop and give meaning rather than passively rely on spurious trust conditions.

The relationship between saturation and sample size Kostere and Kostere (2022) said that they should follow a strategy developed by the researcher to select participants eligible for the study so they can verbalize a description of their experiences. In that regard, Kostere and Kostere stated that the participants interested in generic qualitative inquiry show data saturation when gathering fresh data no longer sparks new theoretical insights or reveals new core academic categories' properties. This process occurred when I saw that the participants generated no added information to answer the research questions and that the sufficiency of data collection was reached. Also, Kostere and Kostere stated that sample size depends on what information is sought, the purpose of the inquiry, and what is at stake. In that regard, the relationship between saturation and the sample size is that saturation prevents redundancy while the sample size is consistent with past patterns.

Instrumentation

The instrumentation plan developed through this qualitative research specifically addressed trust in the decision-making process of MAS. Data collection instruments and

sources for this study included computers, email addresses, consent forms, sample questions, and a notebook. This study also included demographic data such as age and experiences to provide a more comprehensive response. The participants engaged in an unstructured interview addressing the core question on trust, and the most effective approach this study used was the generic qualitative inquiry. Creswell (2007) contended that qualitative inquiry must plan to account for rigor related to data collection and reporting findings. Creswell stated that rigor is seen when extensive data collection in the field occurs or when a researcher conducts multiple levels of data analysis, from narrow codes or themes to broader interrelated themes to more abstract dimensions. Given that accounting, the participants' stories followed the rigor of Creswell's outline, and the study was checked to validate the accuracy of the researcher's work.

Like Etzioni's (1967) original question, this research seeks to know if trust matters to individuals and how a transparent tool for regulatory compliance was established. In doing so, this tool for technology policies offers evidence of trust for computer users and a means of protection from social harm. While conducting this study, no historical or legal documents were used as data sources. Instead, the participants demonstrated why they represent the data source because they can best relate their experiences with MAS.

Furthermore, using the data collection method, participants provided an account of their experiences with MAS when responding to the interview questions. Based on the narrative of their documents, Kostere and Kostere (2022) state that the participants are allowed to immerse themselves in the experience, which was used as sufficient data for the study. Because this study is a generic qualitative inquiry, Kostere and Kostere stated

that the researcher listens and uses probing and clarifying questions as needed to reach sufficient data collection. When taken together, the success of this study rested on collecting sufficient data, determining how well-planned the study is, and how others might judge the study in the end.

Data Collection

The data for this study was collected from online students through the Walden University Participant Pool bulletin board, social media, and LinkedIn by meeting the criteria set. Upon meeting the criteria, 10 participants were selected for a recorded phone interview, and notes were taken during the interview. The interview was scheduled for approximately 15 to 30 minutes, and all participants were recruited after Walden University Institutional Review Board (IRB) approval was issued. The participants were given an informed consent form, and upon completion of the interview, the participants received a thank you letter for participating, which stated that no follow-up was necessary.

Data Analysis Plan

When seeking to understand how human experience is related to decision-making, a generic qualitative study allowed thematic analysis to analyze the data. Kostere and Kostere (2022) stated that thematic analysis is a data analysis procedure with a long history of recognition in the social sciences. It is a good fit for this dissertation. In this study, 10 participants were selected to consider how concerned they are about trust in the decision-making process. The data analysis used the following Braun and Clarke's (2006) six-stage thematic guide: (a) familiarizing yourself with your data; (b) generating initial

codes; (c) searching for themes; (d) reviewing the themes; (e) defining and naming the themes; and (f) producing the report.

Kostere and Kostere (2022) stated that using the main research question to capture the participant's experience validates the findings. In that regard, I first familiarized myself by listening to the recordings and reviewing the transcribed data several times to ensure I captured all the data. Next, I combined deductive and inductive coding, starting with deductive coding created before the raw data's initial reviews capturing what the research question asked. Thereafter, initial codes based on policymaking and decision-making processes were identified in my theoretical framework.

Braun and Clarke (2006) stated that whether there are several interviews or focus groups, thematic analysis involves searching across a data set to find repeated patterns of meaning. Next, I used inductive coding, which, according to Braun and Clarke, means the themes identified are strongly linked to the data, so I can now create a list of codes from the raw data. After thoroughly reviewing the participants' responses, codes were assigned before submitting the data to Delve software to extract the related analysis. A more concrete pattern was identified before grouping the codes into themes relevant to the research questions. Finally, I defined and named the themes in my thematic data analysis plan before producing a diagram of the analysis to eliminate any discrepancies.

Issues of Trustworthiness

Trustworthiness is the extent to which one can have confidence in the study's findings. However, this qualitative research has some unique, trustworthy issues with MAS, which were discussed. In qualitative research, the researcher must establish

credibility, transferability, dependability, and confirmability. Using Guba and Lincoln's (1994) theory for constructing trustworthiness and authenticity, I showed that my findings were applicable and consistent with the criteria established.

MAS operated without administrative responsibility between agents and technology, raising the issue of agents' trust or trustworthiness. However, an individual's experience with MAS showed a variety of realities, which helped society to understand the implications of the decision-making process and the meaning of MAS applications to users. Ramchurn et al. (2004) presented trust from an individual level, showing an agent has some beliefs about the honesty or reciprocating nature of trust interaction, and from a system level, trust was determined by protocols and mechanisms where there are rules to regulate the system. Because trust or trustworthiness is an interchangeable process involving both individual and system levels, credibility is an appropriate strategy for MAS to show through data saturation that there is a component that involves establishing trust.

Guba and Lincoln (1989) justified the epistemological foundation as a significant theoretical proposition and a theoretical framework for a neutral base outcome by utilizing credibility, transferability, conformability, and dependability tests. Together, the theories and approaches engaged and highlighted vital decision points, including policy regulations, to make trust in the decision-making process of MAS possible. Further, Guba and Lincoln provided ontological authenticity for trust through evaluative criteria, and the meanings of each criterion are listed below.

Credibility

Lincoln and Guba (1985) pointed out that credibility involves two aspects: first, carrying out the study in a way that enhances the believability of the findings, and second, taking steps to demonstrate credibility to external readers. Credibility was established to investigate triangulation strategies, member checks, and data saturation in qualitative research. Based on the assumption made in Chapter 1, the findings and the participants' responses were in concert Chapter 2 literature review to make the study believable, hence establishing credibility.

Transferability

It is also noted that transferability is the applicability of findings based on the comparability of contexts. This study achieves transferability by using valuable data from other researchers to replicate the study. Merriam and Tisdell (2016) stated that the researcher must provide sufficient descriptive data to make transferability possible. In that regard, the research makes transferability possible.

Dependability

Further, accounting for factors of instability and change within the natural context showed that the findings are consistent and could be repeated. The study was straightforward and consistent in establishing audit trails. The interview began and ended with knowledge and purpose of the study while safeguarding dependability.

Confirmability

As with the other criteria, Walden University (n.d.) noted that confirmability is the capacity to authenticate the internal coherence of data, findings, interpretations, and

recommendations. As Merriam and Tisdell (2016) stated, confirmability is the objectivity of qualitative research, and objectivity is to be open-minded and to go where the research leads. There are no preconceived ideas, biases, or faulty logic. This research focused on the participants' experience as reflected in the analysis and reporting. Further, the analysis of the data accounted for, and was used to confirm the study's results. Confirmability was verified by the notes taken during the interview.

Given Guba and Lincoln's (1989) conventional benchmark, it helped to determine the trustworthiness of the MAS application. Along with the ontological authenticity, Guba and Lincoln's design created a personal construction position for trust by applying Hirschheim and Klein's (1989) approach that information systems could support obtaining trust in AI applications. For that matter, Hirschheim and Klein pointed out that the reality of a thing such as trust consists of the objects, properties, and directly observable processes, which this phenomenon allowed me to demonstrate by the generic qualitative inquiry approach. In that regard, the study showed the intercoder reliability because different coders arrived at the same findings. When taken together with the theories and approaches, this study constructed an affirmation of trustworthiness in the MAS application.

Moreover, interpretive research showed an appreciation for the differences derived from the study. Willis (2007) noted that interpretivism is the research approach the researcher implemented to synthesize facts derived from qualitative secondary sources. The significance of this interpretivism approach is that it allowed human participants to communicate their stories, and what is learned was documented about the trustworthiness

of MAS. Choosing interpretivism for this research approach is significant because the participants are humans telling their stories. As the researcher, I have written the interpretative text of what I learned about trust and MAS application. With the interpretative approach, I gathered data, identified, categorized, and analyzed the pattern, and a theory was developed from the experience to give trust meaning.

Ethical Procedures

This qualitative study explored an ethical consideration of 10 participants' experience with the MAS application, where the beliefs, attitudes, and meanings were collected as data. To collect this information, I established an agreement, gained access to participants, and ensured that data was in place. The completion of an IRB form was followed. Given the guidelines and criteria, I submitted to the requirements and gained permission to collect data. Participants in this study were purely voluntary, and no significant harm was associated with this study.

This study examines online students who are familiar with a data collection tool called MAS, an artificial intelligence application. All participants were treated as determined by the IRB, and nothing was disclosed to anyone who did not need to know. In that regard, permission and approval were sought to obtain and fulfill this dissertation.

Participants for this study were purely voluntary, and there was no harm associated with this study, nor did any participants have a close relationship with the researcher. I mitigated any ethical concerns about this study by working closely with the IRB to ensure the process was ethical and aligned with scholarly research criteria.

All participants received a consent form via email, and after reading it, they returned via email “I Consent” before the interview. Data planning, execution, and ethical concerns for this study, including the treatment of the data, archival and whether data were anonymous or confidential, or concerns related to protection for the confidentiality of data, data storage procedures, data dissemination, who has access to the data, and when data is destroyed were followed by the research ethic approval worksheet to maintain ethical integrity. Oshana (2014) stated that what constitutes acting with integrity is what interest users and what ethics serve. As a result, establishing such standards demonstrates that there are ethical guidelines to meet for compliance, safety, and trustworthiness.

All participants were treated ethically, and no vulnerable populations were contacted; only participants who met all criteria for the study were contacted. All collected data are confidential; only the researcher has access, and no one has advanced knowledge. The participants were asked to refrain from sharing interview questions or discussing the interview. Participants were told that if any questions were considered too sensitive, they were not required to answer, and the questioning was terminated. Participants understood that the study was voluntary and could withdraw from participating anytime. Further, if the participants express discomfort or trepidation, I will stop the interview and ask if they wish to continue. All identifiable information was removed from the files before the datasets were released for validation.

Summary

This study aimed to explore how concerned computer users were with the decision-making process of MAS. Chapter 3 focused on the research methodology, which

proved what was best suited for the study. An examination of how rules for decision-making protected and enhanced public interest in policymaking was included as a goal of this study. Research design and rationale, the role of the researcher, methodology, and trustworthiness issues put forward an argument that raised severe consideration as to why this trust proposal should be explored. The theory, design, instrumentation, data collection, data analysis plan, and ethical procedures focused on the topics, including IRB guidelines and criteria. However, different approaches to qualitative findings were analyzed to formulate conclusions. I completed the thematic analysis using Braun and Clark's (2006) six-step data analysis process.

More importantly, I discussed the study's credibility, transferability, dependability, and confirmability to meet scholarly standards. This section focuses on the role of science and policy governance in creating an awareness framework for the benefit of all. In transitioning to Chapter 4, the study's findings and the following topics are addressed: pilot study, setting, demographics, data collection, data analysis, evidence of trustworthiness, and the results.

Introduction

The purpose of this generic qualitative inquiry was to explore how concerned computer users are with the decision-making process of MAS and whether a policy-making rule for decisions can protect the public interest. Building on the extensive work done by Dorri et al. (2018) and Rossi (2019), this study intends to show how AI techniques rely on vast amounts of data, algorithmic commands, how the data are handled by AI and by those who produce them are without trust.

As Adamson (2018) noted, an AI programmer can reflect their own assumptions in an algorithm, making trust in this uncertain situation significant. Marr (2018) stated that IBM, humans, and machines across the globe create 2.5 quintillion bytes of new data daily. Faught (2023) stated that with all that data mining comes a need for public policy and decision making to keep pace with the rapid advancement of technology. As a result, the findings in this study can provide a policy that establishes evidence of trust. While this interpretivism paradigm emphasizes an action based on user experience, it intends to demonstrate how policy regulation can pave the way for trust. Keep in mind that this phenomenon proposes an epistemological question regarding the existence of trust in the decision-making process, which generic qualitative inquiry assisted in discovering.

Bellamy (2016) stated that with generic qualitative inquiry samples, individuals can determine what works best in each situation. For example, one can draw on a single approach by combining several qualitative methods. However, it can deviate from the intent, guidelines, or rules in a way that may benefit the study or does not adhere to any

recognized qualitative approach. As a result, this study explored how technology operates without consequences and demonstrates the need for policy to bridge the gap between computer science and public policy. Sivan-Sevilla (2023) stated that in 2022 alone, nine AI-related U.S. federal laws and 21 state-level laws were passed to limit threats caused by AI. While these laws help to explain the trust issue from an epistemic inquiry, these laws are also technological policies that help to protect society and the need to track policy compliance.

The following research questions guided this study:

RQ1: What concerns do students or graduates at online universities have about trusting the decision-making process of an artificial intelligence application using MAS?

RQ2: What concerns do students or graduates at online universities likely have about regulatory policies aimed at demonstrating trust in MAS?

The sections in this chapter, along with the introduction and research questions, include the settings, demographics, data collection, data analysis, evidence of trustworthiness, results, and a summary.

Setting

IRB approval (08-06-24-0545294) was received on August 6, 2024. I started recruitment on August 26, 2024, following the recruitment procedures outlined in Chapter 3. Central to this phenomenon is investigating how to trust MAS' decision-making process and how the process could help explore the benefits of a policy initiative. The participants were informed that the interview would be recorded via the phone. As stated by Walden University's key terms and concepts, interviewing is a good data collection strategy for

many generic qualitative studies. Participants could state their experiences without being influenced during the interview or study time. The phone interviews made collecting data more accessible to coordinate and showed how collective views based on the participants' experiences and perspectives gave meaning to the trust phenomenon. Ten questions were asked numerically, and I responded to all questions asked by the participants before proceeding with the next question.

Demographics

The demographics and characteristics relevant to this study were presented by 10 participants who provided the findings based on age and experience. The participants interested in the study were students or graduates recruited via social media residing in the United States. There were seven students and three graduates; each participant was 18 to 34, while one was an outlier (see Table 1). Each participant responding to the interview questions had a general knowledge of IT.

Table 1

Demographics of Participants

Participant	Age range	Student or graduate	Years of IT experience	Concern about MAS on the open distribution system	Policies and guardrails on the open distribution system
1	25-34	Student	9 or more	No	Yes
2	35-44	Student	9 or more	No	Yes
3	25-34	Student	9 or more	Yes	Yes
4	55-64	Graduate	9 or more	No	Yes
5	25-34	Student	6 to 7	Yes	Yes
6	25-34	Graduate	9 or more	Yes	Yes
7	18-24	Student	6 to 7	No	Yes
8	25-34	Student	7 to 9	No	Yes
9	25-34	Graduate	9 or more	Yes	Yes
10	35-44	Student	9 or more	No	No

Data Collection

Data collection was conducted from August 28, 2024, through October 4, 2024. Initially, I posted my study on the Walden University Participant Pool and had no replies, but the process picked up after the second week when I posted the study on social media. Each data type was collected from 13 participants, and two were from the Walden University Participant Pool. All the participants were from the United States, and each participant was told what to expect from the study. Of the 15 participants who completed a demographic survey, 10 met the criteria for the study. The selected participants provided their contact information and a time to conduct the interview. Each participant received their informed consent form, and 10 read and returned an email stating, “I consent”; five participants did not respond, so they were eliminated.

Data collection can have some variations occurring when gathering information. This study followed the plan presented in Chapter 3. The frequency and duration of the data collection took about 30 days, and each participant gave an audio recorded interview that took an average of 15–20 minutes. The interviews were recorded on my cell phone, and notes were taken during the interviews. Data saturation occurred after the 10th participant because no new data were obtained from the participants. Microsoft Word was used to create transcripts of the recorded data. Data, tables, and quotes from participants represent the findings. No unusual circumstances were encountered in the data collection.

Data Analysis

The data analysis appropriate for this generic qualitative inquiry was thematic analysis because it works well for data collected from interviews (Kostere & Kostere,

2022). Each participant was told to share their experience by answering the questions as comprehensively as possible and the analysis of their answer would inform the research questions. With participants' consent, I asked 10 questions, and using the participants' words, I captured their experience and decreased any biases. For example, if a participant did not understand the question and needed clarification, I told the participant to give the best answer, ensuring I did not lead the participant. Because my goal is to understand computer users' concern for trust in the decision-making process, I reported participants' experience as recorded. A Microsoft Word document was created to transcribe the data verbatim.

When starting the inductive analysis, I looked for what was common in the data collected from each participant to see how to code the answers. I then employed Braun and Clarke's (2006) six-step thematic guide to analyze the data individually. In Step 1, I familiarized myself with the data by listening to the audio recording and reviewing my notes. After seeing how the data relate to each other, I put them in categories. Based on the frequency of the data, an empirical consideration was determined. The themes of the research purpose emerged by analyzing the data about the preexisting themes and the patterns tested for sentences and phrases.

Given my small sample, I searched for information that stood out. Although some transcripts contained information that did not relate to the question, I stored it as indifference. For instance, when a participant was asked about concern for trust, I got a response about the advantages and disadvantages that can be achieved. This response could not be coded as a unit to the themes because concern engages attention or interest,

and the response fits a condition or a position. I continued my initial coding with each interview question independently while checking in with my committee chair.

In Step 2 of Braun and Clarke's (2006) analysis guide, I generated initial codes, and as Kostere and Kostere (2022) stated, data are analyzed through the lens of the leading research question. Therefore, I focused on the relevant data to each code and those that reflected or identified with data that covered a more significant representation. In that regard, the frequently coded statements from the participants included specific data corresponding to the categories and themes and emphasized importance shown in Table 2.

Table 2*Participants' Data Extract, Codes, and Frequency*

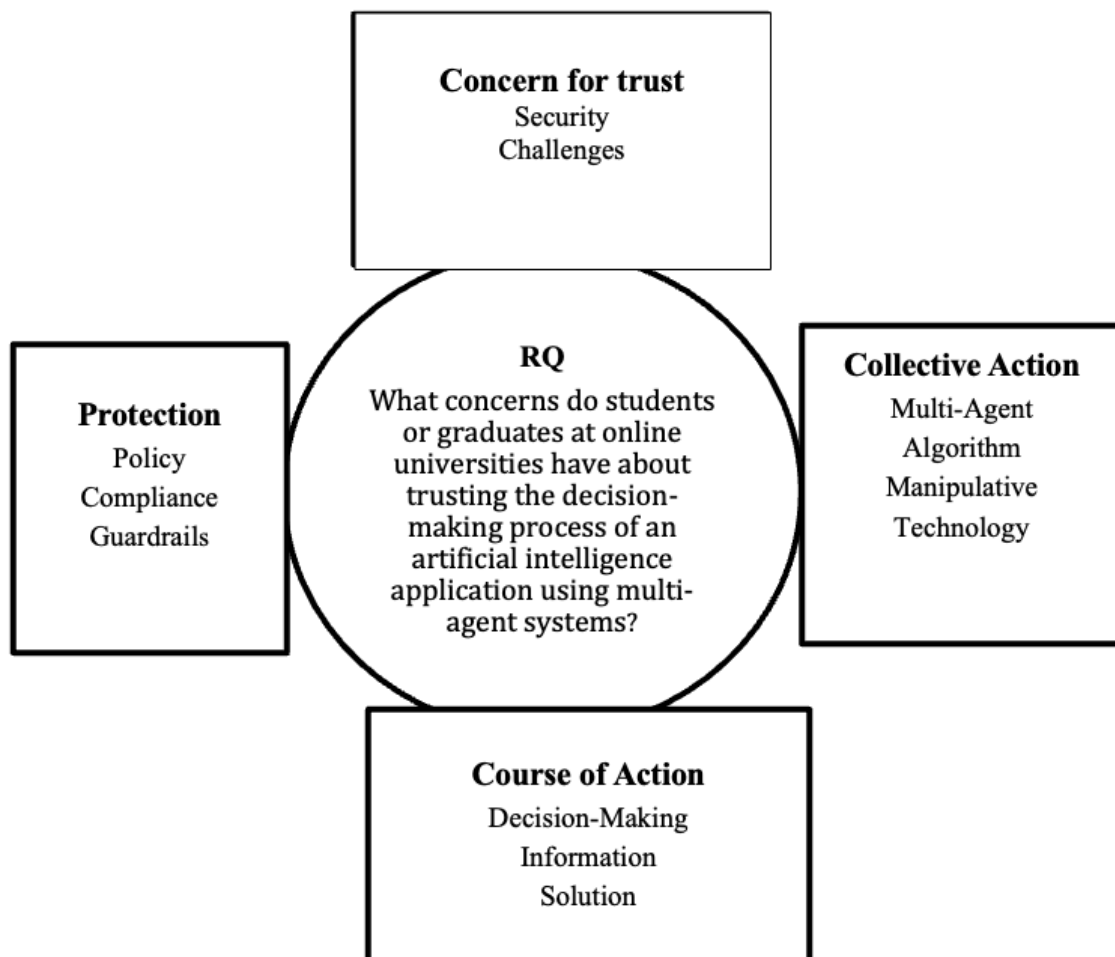
Data extract	Code	Frequency
If the systems make decisions or anything towards a process for better improvement, I will also say I need to trust or confirm that it's the right process that needs to be selected because an AR system can also process things, and it wouldn't be the proper thing to do but it's not going to notice that decision.	Decision making	6
I understand that AI can take on human forms. I have the understanding that AI can be manipulative, but there is also an effective side of it where it can increase your productivity in the work environment.	Manipulative	7
Algorithm in computer science, I would describe it as a, ahh, method, a method to achieve an output, so kind of like umm, a way to calculate data to achieve an output.	Algorithm	9
I think umm, all systems need guardrails, like I said, umm for people to be comfortable with decisions that are being received we must put guardrails because we don't want to be impersonated, we don't want any fake personalities being used to represent a person it is important that we adhere to restrictions and umm, and place policies to prevent aah crimes and umm, fraud and things like that from happening.	Policy	15
I think confidence in compliance will come from government control as far as things like FDIC control, telecommunications aspects, or how the FDIC may control trade, I think if there were a lot more government regulations it would give a little more trust.	Compliance Solution	7 10
If it gives the information that we already know to be true then we can trust that answer, we can trust that system to give us answers to questions that we don't necessarily know the answer to, the guiding principle have to start from the root up, they have to start from the basis to guide us forward into the future.	Information	17
I believe like if we have policies and more regulations around the usage of AI and the sources that we get our information from, especially like a student, like me, when you just want to research for a paper or assignment, I want to make sure it is trustworthy	Technology	2
I think with the general public it does not give a whole lot of trust because the trust level in MAS is where a lot of people view it, it has the potential to take away jobs, or it has the potential a negative side effect on umm, the, the in many different forms so I don't think that it has, it has a negative and positive side effect.	Multi-agent	6

Realizing that my coding had become uniform, I shifted to categories representing themes, as required by Step 3. Identifying theory and themes, Kostere and Kostere (2022) stated that data are analyzed for each participant individually, and the patterns that emerge from the data are organized into themes. Although patterns and themes change in this

process because data are eliminated or irrelevant to the research question, the analysis continues. At this point, I compared, contrasted, and combined the data and grouped the codes. The course of action, collective action, protection, and concern for trust stood out around the research questions. Each meaning unit connects in ways that develop the pattern and the emergence of the overarching themes, as illustrated in Figure 1.

Figure 1

Codes, Categories, and Themes



In Step 4, I reviewed the themes that emerged from the data relating to the research question. The data provided two themes that needed to be emphasized: discrepancies and

nonconforming information. The first level was essential because it required reviewing the coded data and identifying data corresponding to specific patterns. I then refined the theme and moved to the second level, explaining the data that needed more consistency and nonconforming. Table 3 shows data from seven participants who were flagged or did not meet the requirements.

Table 3

Discrepant and Nonconforming Data

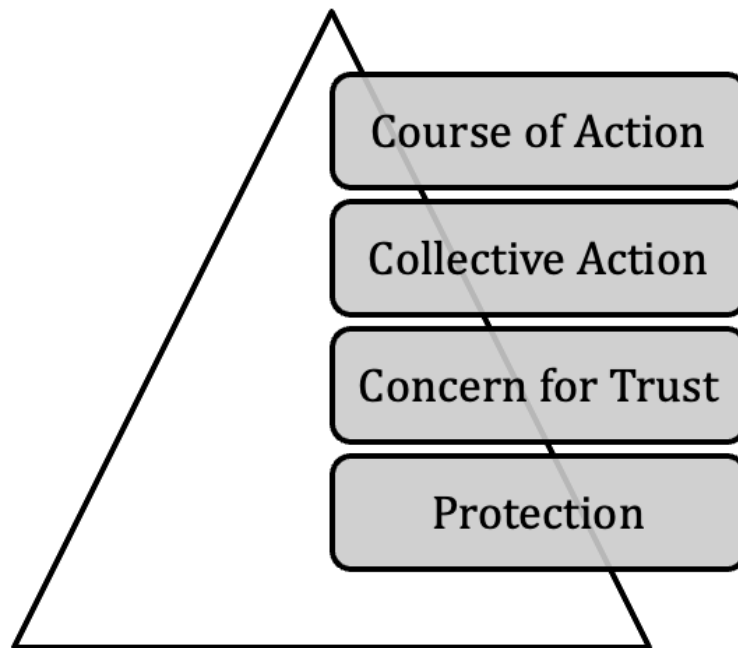
Data extract	Code	Frequency
Participants 4 and 6 stated, "I don't know much about that; all I know is that the computer uses algorithms to provide answers, but I cannot elaborate on that because I do not know much."	Indifference	2
Participant 5 stated, "What I have realized, what I have tested and seen so far when it comes to politics this past couple of elections, information can be manipulated."	Election	1
Participants 4 and 8 stated, "Sorry, I do not."	Nonresponsive	2
Participants 1, and 5 stated, "once it goes down then, I think, pretty much the world has geared towards technology and not even using our textbook pretty much, umm like, you know, like hard book copy or paper book copy, they are online, so when the technology goes down then you find yourself not being able to do an assignment or get the information you need."	Technology	2

Also, I captured the participants' experiences that deviated from the theme pattern, which overlapped. The data that I found challenging to measure was "worry," so I did not make a theme for that data because "worry" took the form of distrust. For example, a participant stated, "It sounds like a good relationship; we need to be able to have full control...we also want to know it is capable of doing what we are asking it to do." Another participant said, "When people control anything, it can be used, and it can have a

negative side effect as far as infiltrating other people to gain negative aspects of things.” Also, another participant said, “I would be scared of people tracking me everywhere I go or people bombarding me to buy a product or things of that nature.” As a result, the data that led me to the theme of concern for trust was most supported by “worry,” which fit as discrepant and non-conforming data. Having sorted the initial codes into categories or candidate themes, I now look at the broader themes where I considered and combined the codes to form the overarching themes. The ‘thematic map’ displays four candidates’ themes that demonstrate from the least to the most supported data. See Figure 2.

Figure 2

Finalized Themes



Braun and Clarke’s (2006) Step 5 states that the themes should be defined and named. The analysis generated a precise typology and label for each theme, and the themes were triangulated to identify with the Dorri et al. (2018) survey. The data tell a

straightforward story about the participants' experience of trust in the decision-making process of MAS. I considered the following low codes: decision making, information, and solutions, which allowed for evaluating options that concluded as the *course of action* theme. Also, multiagent algorithms, manipulation, and technology followed as the sequences of steps for automating computer decisions; therefore, the theme was labeled *collective action*. Then, combining security, reliability, and indifferences that denoted threats allowed for the *concern for trust* theme. Finally, the high codes were based on policy and compliance, and guardrails were labeled with the *protection* theme.

The final step in Braun and Clarke's (2006) six-step guide is the analysis and a scholarly report of the 10 participants' personal experiences. In this thematic extraction, the coded data were categories and patterns formed due to the statements provided during the interview. Delve coding software supported and validated the coding for the data analysis. The data were grouped, and four themes were extracted from the study.

Evidence of Trustworthiness

Credibility

Lincoln and Guba (1985) pointed out that credibility involves two aspects: first, carrying out the study in a way that enhances the believability of the findings, and second, taking steps to demonstrate credibility to external readers. Credibility was established to investigate triangulation strategies, member checks, and data saturation in this qualitative research. Based on the assumption made in Chapter 1, the findings were in concert with Chapter 2 literature review. As stated in Chapter 3, my credibility strategies were adjusted

when the participants did not answer, or I thought they were not responsive to the question; I asked if they would like to elaborate on their response.

Transferability

It is also noted that transferability is the applicability of findings based on the comparability of contexts. This study achieves transferability by using valuable data from other researchers to replicate the study. Merriam and Tisdell (2016) stated that the researcher must provide sufficient descriptive data to make transferability possible. In that regard, I adjusted the transferability strategies indicated in Chapter 3. Although sufficient descriptive data was supplied to make transferability possible, it answered the question of what concerns students or graduates at online universities have about trusting the decision-making process of an artificial intelligence application using a multi-agent system. Along with regulatory policies, the study demonstrated that trust can now be answered with more details. The data collected was original, and because qualitative studies can be subjective, transferability is essential to any findings.

Dependability

Merriam and Tisdell (2016) stated that dependability focused on whether the study can be replicated. I adjusted the dependability strategies indicated in Chapter 3 to address the findings of this study and account for biases, limitations, and changes within the natural context to show that the findings are consistent and could be repeated. The study was straightforward and consistent in establishing audit trails. None of the questions were altered. This study followed Braun and Clarke's (2006) six-step guide for analyzing

qualitative data. The interview began and ended with knowledge and purpose of the survey while safeguarding dependability.

Confirmability

The adjustment to confirmability addresses Walden University's (n.d.) statement that confirmability is the capacity to authenticate the internal coherence of data, findings, interpretations, and recommendations. Also, Merriam and Tisdell (2016) stated that confirmability is the objectivity of qualitative research, and my objective is to be open-minded and to go where the research leads. There are no preconceived ideas, biases, or faulty logic. This research focused on the participants' experience as reflected in the analysis and reporting. Further, the data analysis was used to account for and confirm the study's results. The transcript of the audio-recorded interview verified confirmability.

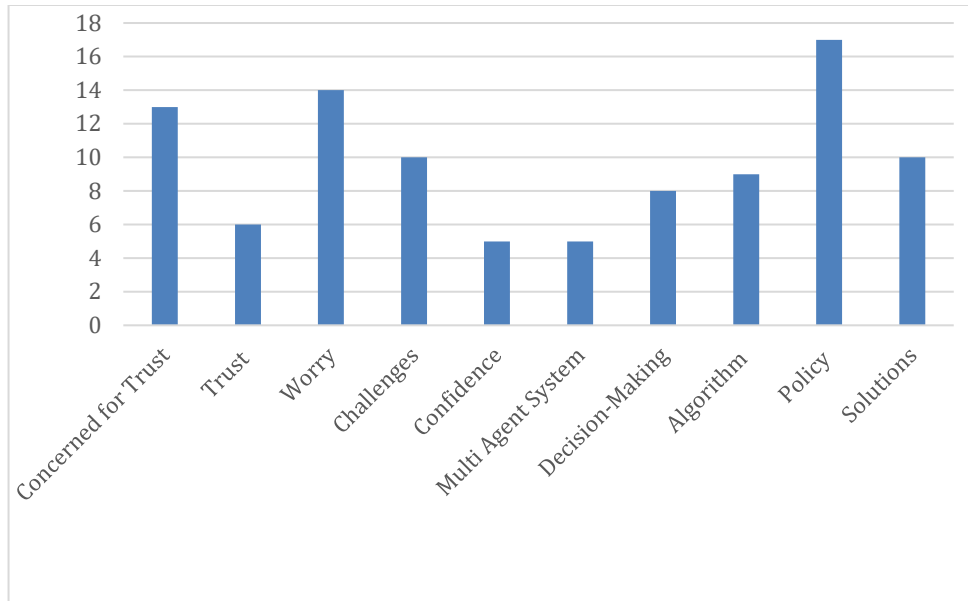
Guba and Lincoln's (1989) conventional benchmark helped to determine the trustworthiness of the MAS application. Along with the ontological authenticity, Guba and Lincoln's design created a personal construction position for trust by applying Hirschheim and Klein's (1989) approach to information systems, which supported obtaining trust in AI applications. For that matter, Hirschheim and Klein pointed out that the reality of a thing such as trust consists of the objects, properties, and directly observable processes, which this phenomenon allowed me to demonstrate by the generic qualitative inquiry approach. In that regard, the study showed the intercoder reliability because different coders arrived at the same findings. When taken together with the theories and methods, it constructed an affirmation that there is a concern for trust, but there was a mixed response to the MAS application. Based on the reading of each participant's meaning and

explanation of MAS, I concluded that they lacked an educational understanding because they could not provide substantive information.

Results

This study has successfully answered the research question, and the result has produced resounding conclusions. The participants' experience in connection with trust in decision-making revealed that many participants are worried. Some participants were worried about their information being stolen, scared of people tracking them, bombarded with buying a product, or hoping the program's creator did the right thing. More importantly, participants have learned to exist and accept uncertainty as a way of life. However, conducting this study brings authoritative value to society because there are no tools to guide participants in trusting the application.

The result shows that when the participants established the criteria for the study, nine participants said they were convinced that the open distribution system should have policies, guardrails, and compliance to demonstrate trust in MAS. However, when the same set of participants was asked during the interview what they understood by trust in the decision-making in MAS, six participants said, "Personally, I don't really trust them." Without protection, participants will continue to worry about trust. Although I did not have discrepant data, I will acknowledge worry was an outlier. Still, it is inexplicable, but the collective action would set a course for action in the open distribution environment for protection system. Figure 3 illustrates the data extracts that conclusively supported the analysis of the themes.

Figure 3*Data Extracts***Course of Action**

In this generic qualitative research, the lived experience and meaning of the participants were brought together by the scope and substance presented in this study. The process includes coding, categorizing, identifying the pattern, and finding the themes that Delve Solution validated. In that regard, the transcripts that included decision-making showed a basic understanding of the topic, especially when participants 1, 2, 3, 7, and 8 almost repeated the same elements. However, with the challenge code, several participants were concerned with who was putting in the information, and solutions rested on the accuracy of the information, which gave rise to a course of action.

Collective Action

I evaluated the options in the next level and found an exchange process. As a result, multi-agent allows for a type of interaction with the algorithm. However, 6 participants responded no, when asked during the demographic survey whether they had any concerns about the multi-agent operation on the open distribution system. However, in the interview session, 5 participants needed help understanding what multi-agents meant, and two participants stated it could be manipulated. In this regard, the theme relied on each other's synergy to complete and achieve the outcome. Because this process requires change, it became evident that multi-agent manipulation, algorithms, and technology codes produced a collective action.

Concern for Trust

A simple observational note was made when qualifying participants for the demographic survey. Five participants were unconcerned about trust in multi-agent decision-making in the open distribution environment. However, the findings confirmed that eight participants were concerned about trust during the interview. One participant stated, "I am very concerned because it is a computer, and the technology is not always reliable," another participant stated, "I am concerned about trust in computer technology because the AI programs are making it easy for almost anyone using a computer right now." When taken together, the trust concerns raised security, particularly because a participant stated, "I don't have complete trust in computer technology because the minds of mankind can be all to do deleterious things, so my trust in it is not 100%." Another

participant said “increasing cyber security” will guard or defend the security and challenge concerns for trust.

Protection

Using policy to influence trust can bring about social change. In this study, policy, compliance, and guardrails were the themes that were considered the best implementation practice. As stated by a participant, “Policy compliance can improve my confidence in computer technology by being up to date in what is going on around the world.” Another participant stated, “I think if there were many more government regulations, it would give a little more trust.” Furthermore, another participant said, “Policy compliance would greatly improve my trust in technology, especially if the institutions behind MAS are being properly regulated and punished for going against set regulations.” As a result, the themes of policy, compliance, and guardrails influenced the protection outcome.

Summary

Chapter 4 provides the procedures and techniques I used to collect and analyze my study data. The study started with the purpose of the generic qualitative inquiry findings. It provided information on how concerned computer users are with the decision-making process of MAS and whether a policy-making rule for decisions can protect the public interest. Next, I listed my IRB approval number in the settings and stated how I plan to obtain the data for my qualitative inquiry. Then, I explained the characteristics relevant to this study before collecting my data. Ten participants were interviewed, and the data was transcribed verbatim. An inductive analysis using Braun and Clarke’s six-step thematic guide was conducted. I coded and categorized the responses and identified the patterns

formed and the emerging themes. Delve coding software supported the validity of my research.

The evidence of trustworthiness was established to demonstrate that the findings in the study met credibility, transferability, dependability, and confirmability criteria. Also, the findings confirmed that this study provided a methodology that explores a policy that could establish evidence of trust. In other words, the findings agreed that computer users are worried about the decision-making process of MAS but agreed that a policy-making rule for decisions can protect the public interest. In the transition to Chapter 5, the study outlines the introduction, interpretation of the findings, limitations, recommendations, implications, and conclusion to show the complexities of the phenomenon under study.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this generic qualitative inquiry was to explore how concerned computer users are with the decision-making process of MAS and whether a policy-making rule for decisions can protect the public interest. Building on the extensive work done by Dorri et al. (2018) and Rossi (2019), this study intends to show how AI techniques rely on vast amounts of data, algorithmic commands, how the data are handled by AI and by those who produce them are without trust.

As Adamson (2018) noted, an AI programmer can reflect their own assumptions in an algorithm, making trust in this uncertain situation significant. Marr (2018) stated that IBM, humans, and machines across the globe create 2.5 quintillion bytes of new data daily. Faught (2023) stated that with all that data mining comes a need for public policy and decision making to keep pace with the rapid advancement of technology. As a result, the findings in this study can provide a policy that establishes evidence of trust. While this interpretivism paradigm emphasizes an action based on user experience, it intends to demonstrate how policy regulation can pave the way for trust. Keep in mind that this phenomenon proposes an epistemological question regarding the existence of trust in the decision-making process, which generic qualitative inquiry assisted in discovering.

Bellamy (2016) stated that with generic qualitative inquiry samples, individuals can determine what works best in each situation. For example, one can draw on a single approach by combining several qualitative methods. However, it can deviate from the intent, guidelines, or rules in a way that may benefit the study or does not adhere to any

recognized qualitative approach. As a result, this study explored how technology operates without consequences and demonstrates the need for policy to bridge the gap between computer science and public policy. Sivan-Sevilla (2023) stated that in 2022 alone, nine AI-related U.S. federal laws and 21 state-level laws were passed to limit threats caused by AI. While these laws help to explain the trust issue from an epistemic inquiry, these laws are also technological policies that help to protect society and the need to track policy compliance.

The methodological approach used in this study was generic qualitative inquiry grounded by the work of Bilal et al. (2020) and Dorri et al. (2018). Generic qualitative inquiry research, designed by Caelli, Ray, and Mill (2003), defines a phenomenon or situation, as Kennedy (2016) noted. Also, Kostere and Kostere (2022) stated that generic qualitative inquiry supports the need to discover and understand a phenomenon. Accordingly, this study found meaning through data collected from a sample of 10 participants recruited from social media, LinkedIn and the Walden University Participant Pool, to understand a trust phenomenon. Participants were online students of different ages and with different experiences. The sampling method was random to offer an equal chance of being chosen.

Before being chosen, the 10 participants demonstrated their understanding of the principles and challenges of multi-agent and open distribution systems. As Kostere and Kostere (2022) stated, purposeful sampling recruits are participants with experience in the inquiry to illuminate and interpret meanings of the phenomenon. Therefore, saturation was reached when new ideas for answering the research questions are unlikely to emerge. In

that regard, the online students received an invitation letter and survey questions to establish that the students met the established criteria. Upon answering the questionnaire, 10 participants were given an informed consent form before answering 10 interview questions via the telephone. After answering the interview questions, the participants received a thank-you letter. The data collected were used to answer the two research questions.

Further, I used Delve coding to perform and apply codes that identified the common themes or concepts to allow for interpretation, which led to research findings. Saldana (2016) also stated that Delve will enable a researcher to explore emotions, values, conflicts, and judgment. As a result, utilizing participants' perceptions helped to develop a regulatory framework where trust in the decision-making process of MAS was made evident.

Not having policy guardrails to instruct and govern the actions of AI operators raises concerns about why the study of trust in decision-making is needed. Regulatory measures, when taken, can avoid distrust, uncertainty, bias, and cyber security risks to society. The study also argues that a fact-checking tool could be perceived as an evidence-based verification system in intelligent environments that computer users can trust. Further, Martinho et al. (2015) stated that developing communication tools to aid decision-making has become necessary, given that AI applications such as ChatGPT, Bard by Google, Bing AI, and Chat Sonic are tools capable of understanding and responding to various tasks. However, trust in the decision-making process of MAS could lessen security risks because of the adjoining conditions in the open distribution infrastructure.

Dorri (2018) stated that MAS operates because other agents coordinate and produce joint execution for a decision, leaving computer users needing more authority to verify or trust the agents. Because computer applications can understand and respond to various tasks, MAS is no exception; instead, MAS application platforms need safety policies. Recently, the U.S. government's executive and legislative branches have been working with partners across government and industry on actions against AI-based software. According to the nation's cyber defense agency, addressing some of the best practices and threats of AI, note the following policies on Cybersecurity & Infrastructure Security Agency (n.d.):

- Executive Order 14110 “Safe, Secure, And Trustworthy Development and Use of Artificial Intelligence (AI). (October 2023). This EO focuses on ensuring that AI is safe and secure. This will require robust, reliable, repeatable, and standardized evaluations of AI systems, as well as policies, institutions, and mechanisms to test, understand, and mitigate risks from these systems before they are put to use.
- Voluntary Commitments from Leading Artificial Intelligence Companies to Manage the Risks Posed by AI. (Updated September 2023). The Biden-Harris administration has secured voluntary commitments from leading AI companies to help move toward safe, secure, and transparent development of AI technology. These commitments include ensuring products are safe before introducing them to the public, building systems that put security first, and earning the public's trust.
- DHS Policy Statement 139-06 Acquisition and Use of Artificial Intelligence and Machine Learning by DHS Components. (August 2023). This policy statement

provides that DHS will acquire and use AI only in a manner that is consistent with the Constitution and all other applicable laws and policies.

Although these recent efforts on AI policy have moved the needle forward, more work is needed on the decision-making aspect of MAS on the open distribution system. Rossi (2018) stated that the public needs to explore solutions to major social and environmental problems and safety issues, raising ethical issues about the potential social implications of using MAS applications. Providing a safety policy as a solution where computer users understand what MAS represents, its educational value, and MAS' responsibility for implementing the application demonstrates accountability to computer users, and accountability brings trust.

The key findings from this study showed that seven participants between age 18 and 34 all have general IT knowledge, and they all said yes, there should be policies and guardrails on the open distribution system. The only disparity I found was that in the students currently in school with 7 to 9 years of IT experience, five participants stated in their demographic intake that they were not concerned about MAS on the open distribution system. However, when I compared their answers with the interview questions, five participants were concerned about MAS on the open distribution system, and eight participants were worried about the technology.

Interpretation of the Findings

In seeking to find a holistic understanding of how decisions are made by MAS, the participants provided a shared meaning of the trust phenomenon. The findings confirmed and extended the knowledge of AI applications, directly correlated to the peer-reviewed

literature in Chapter 2. The study confirmed the trust concern that students and graduates have about the decision-making process of MAS. For example, a participant said,

Very concerned, especially with the direction of AI because we are supposed to be dependent on the machine in a sense to be able to handle everything; what stops them from learning of themselves to be able to do their own thing.

I refer to Menezes and Nojournian (2019), who addressed this subject in Chapter 2, stated that trust management is critical for developing future artificial intelligence technologies and raised concerns about the abuse of technology. Newman (2017), speaking on the government's role in developing and using artificial intelligence, said nefarious challenges come with decision-making and urged the government to adopt a neutral stance towards all players and platforms to keep the public informed and educated.

Moreover, the importance of decision-making is a course of action that influences this study. As Dorri et al. (2018) stated, human capabilities grounded in decision-making act on the environment. However, the data collected indicated that trust was an issue with MAS, and Rossi (2019) noted a high degree of uncertainty in learning and security in AI applications. Furthermore, policies are plans and procedures that influence decisions. As such, they form part of the context for decision-making, often providing guiding principles. Because this study is a public policy study regarding trust in the decision-making process of MAS, Buchanan (2017) in Chapter 2 provided a way to seek regulatory reforms, improve transparency, and revitalize public trust as positive social change outcomes. Given that the data showed protection through policy, compliance, and guardrails, I refer to Torres (2021) who conducted three participatory technology

assessments regarding the lack of public participation in science and technology, producing an outcome showing undemocratic decision-making processes. Miller (2021) said that standards and policy guidelines should be used to build consensus and provide an understanding of the relevant issues, such as algorithmic transparency, accountability, fairness, and ethical use. Given this knowledge, policymakers must develop an infrastructure through representation, education, and implementation management to show how to trust MAS's decision-making process.

The findings in the context of the theoretical framework fell within the data and scope. My perspective was understanding a phenomenon while being true to the theoretical framework, maintaining rigor and credibility through clear justification and transparent interpretation of findings. In that regard, my interest in the group of participants rests on the fact that they would have more knowledge about MAS and be able to provide rich descriptive data. The group of participants provided their lived experiences and perspectives to better understand the phenomenon. More importantly, this MST combines rational and incremental decision processes to provide for decision-making and policymaking operations. Therefore, it allows me to gather data on the subject and, at the same time, provide policymaking operations.

Limitations of the Study

There are limitations to the methodology and design of this study. Creswell (2013) stated that qualitative research aims to achieve the best possible understanding and deep knowledge of some phenomenon. Accordingly, this study explained why trust is needed in MAS's decision-making process and how policy regulations fit MAS as a trusted tool.

Given that technology governs most of our lives, it is essential to know how technology is designed and programmed or to be aware rather than leave computer users vulnerable to the technological settings. As a result of this limitation, it has become difficult for the researchers to stay neutral. Based on the data results, I will have to go with the participants to lessen the influence of limitations, stating that they are left helpless when the system goes down. In this regard, limitations continue to make it difficult for researchers to stay neutral. However, in ensuring validity and reliability, I used reflexivity to eliminate biases and maintain an open mind. O'Neill (2002) stated that transparency destroys secrecy, which limits the deliberate misinformation that undermines relations of trust in the open distribution system.

Recommendations

I recommend that specific actions be taken as a result of this study. One factor that stood out was how many participants expressed their worry about technology, which tells me that trust is a significant factor. However, it is equally important in how decisions are made. Therefore, the tech industry elite must be able to represent, educate, and implement guidelines for algorithms and AI's capability, establishing trust so that computer users will no longer feel vulnerable or mute to a system if they can control their settings.

Considering a policy option that tech companies must comply with should be the roadmap for future studies. The data obtained demonstrated that policy, compliance, and guardrails were high in the participant's responses. Decision-making requires policymakers to select the best course of action. It would lessen uncertainty, and at the

same time, tech companies would be better represented, computer users would be educated, and a vital but new social structure would be implemented.

Implications

This study has implications that will impact positive social change because computer users are concerned that their technology experience should not be worrisome. Public safety is national safety, and the tech companies must seek to address this concern that the participants raised, which will bring about a positive social change. According to Walden University (2012), social change brings long-term solutions and promotes lasting effects. Overall, this generic qualitative inquiry focused on a research question that captures the richness of participants' experiences while maintaining methodological rigor through transparent data collection and analysis practices. To that end, President Biden has clarified that we must seize AI's opportunities while managing its risk. Therefore, Executive Order 14110 (March 28, 2024) speaks to the safe, secure, and trustworthy development and use of artificial intelligence. Still, more research is needed to understand how this scientific discipline aimed at building machines can perform tasks that require human intelligence. Finding a solution for trust in the decision process must not be left to improved algorithms or massive amounts of data but rather to policy compliance.

The research impact has a public policy direction because AI is decision-support for doctors, educators' financial enterprises, and other professionals, as Rossi (2018) stated, who rely on big data. Because most computer users are concerned about the uncertainty of their information, concern for trust, the lack of protection of their information, and the biases experienced in an open distributive environment produce

significant challenges. In addition, tech companies use cookies to track and collect data, a process that computer users find worrisome. These methods prevent and limit the accuracy of information, hindering the decision-making process's reliability. After analyzing the literature review and the participants' experiences, it became evident that the rational and incremental approach proved that a logical step must be a policy solution. With this course of action, computer users will find a practical outcome that benefits society because trust is essential.

Furthermore, my recommendation for practice is to foster a supportive environment where computer users can produce their settings. Tech companies can promote a supportive learning environment that represents, educates, and implements a tool for personal settings where guidelines, compliance, and policy regulations address decision information.

Conclusion

This study provided a comprehensive analysis of the impact and lack of trust in the decision-making process of MAS. The data was collected from 10 participants of various ages and experiences, indicating concerns and worries about the future of technology. The findings were consistent with the literature review, decision-making and policymaking operations, as stated by the participants, can be implemented from a public policy perspective to safeguard and bring about trust. Because the study showed how rational and incremental policymaking can safeguard decisions, trust is no longer a technological hindrance, but a tool for decision-making. As a result, the arcs set by forces beyond

computer users' control can bend toward guardrails, compliance, and policies to demonstrate social progress.

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Appendix A: Expert Panel Letter

Dear Dr. _____

I am a doctoral student in Walden University's Ph.D. Public Policy and Administration program with a concentration in Terrorism, Mediation, and Peace. I am completing my qualitative dissertation titled A Public Policy Study on Trust in Decision-Making of Artificial Intelligence.

I am in the process of obtaining IRB approval and would appreciate it if you would be a "one-time member" of an expert panel to review my interview questions. The study will utilize an open-ended questionnaire that is anticipated to take about 45 to 60 minutes to complete. I have separated the interview questions to correspond with the perspective research questions. I would greatly appreciate your being on my expert panel and reviewing the interview questions. I am asking both content and methodology subject matter experts for in-depth feedback. I take your role seriously, and the interview will be modified using your recommendations for changes (additions, subtractions, changes in wording). This important activity will validate the content of my interview questionnaire. Attached to this email are the interview questions that I would like you to review. I would appreciate it if you would return your comments to me by 7th May 2024.

If you have any questions, please do not hesitate to email me at XXXXXXXX. Also, don't hesitate to contact my chair, Dr. Gregory Campbell, XXXXXXXXXXX, with any questions about the study.

Thank you very much for your assistance.

Sincerely,

Avril Bunbury-Thomas

Avril Bunbury-Thomas

Appendix B: Interview Questions

Please answer the following questions as comprehensively as possible. An analysis of your answers will inform the research question.

1. How concerned are you about trust in computer technology?
2. What challenges have you encountered with computer technology?
3. How important is it for you to trust computer technology?
4. What is your understanding of multi-agent systems?
5. What is trust in a multi-agent system?
6. How can trust increase your confidence in computer technology?
7. What do you understand by trust and decision-making in a multi-agent system?
8. How can policy compliance improve your confidence in technology?
9. What does algorithm in computer science mean to you
10. How can multi-agent systems be trusted to make good decisions?

Research Study Seeking Volunteers



Caption: This is a new study about the experiences of people with trust concerning decision-making processes in multi-agent systems (MAS) that could help computer users better understand how artificial intelligence makes decisions. For this study, you are invited to describe your experiences with trust and the decision-making in MAS, as well as determine how regulatory policy can address trust.

About the study:

- One 15–30 minutes phone interview that will be audio recorded (no videorecording)
- To protect your privacy, the published study will not share any names or details that identify you

Volunteers must meet these requirements:

- Students or graduates of an online university.
- Knowledge of information technology.
- A general understanding of accountability and trust in technology.

This interview is part of the doctoral study for Avril Bunbury-Thomas, a Ph.D. student at Walden University. Interviews will take place during August.

Please message avril.Bunbury-Thomas@Waldenu.edu privately to let her know of your interest.

