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UNRAVELING SOCIETAL DYNAMICS FROM MARCUSE TO THE DIGITAL AGE

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ABSTRACT

Purpose- This paper explores the complex interplay between technology and society, focusing on technopolitics to understand how technological advancements shape social and political dynamics. Drawing on Herbert Marcuse's critical perspectives in One-Dimensional Man, the study investigates how technopolitical forces contribute to contemporary challenges like social isolation, political polarization, and changes in public discourse. Incorporating insights from sociology, political science, psychology, and technology studies, this research provides a comprehensive look at the evolution of technopolitical structures and their effects on modern society. The paper aims to offer a deeper understanding of technopolitics along with practical insights for addressing its impacts on society.

Methodology- A diverse methodological approach, combining qualitative and quantitative analysis, case studies, and historical comparisons, has been used to capture the multi-layered nature of technopolitics and its varied implications for social structures and governance.

Findings- The research highlights that rapid technological changes have redefined human interactions, fostering social isolation and weakening traditional community ties. As technology increasingly intersects with politics, it reshapes political engagement, with digital platforms altering public discourse and transforming the nature of conflict and participation. An important finding is the evolving role of engineers, who now not only develop technological systems but also influence political processes and public opinion. The concept of a "technopolitical ecosystem" is introduced, emphasizing the close link between technology and politics and the need for a comprehensive approach to navigate these impacts. The findings underline the importance of considering technological advancements from a sociological perspective to develop policies that are both sustainable and effective.

Conclusion- This paper underscores the profound influence of technological progress on social and political structures, demonstrating how technopolitics shapes relationships and governance alike. Through a multidisciplinary lens and historical and contemporary examples, the study advocates for careful, inclusive strategies to ensure that technological advancements support social cohesion and political stability.

Keywords: Technopolitics, social impact, marcuse, technological hegemony, societal transformation
JEL Codes: O33, D72, H10

1. INTRODUCTION

Simultaneously, the interplay between the collective societal framework and the individual—referred to simply as "the individual"—has historically been ambiguous. The dynamics of individual interactions within the broader societal context remain elusive, even in contemporary discussions (Sahlins, 1972, p. 15; Tainter, 2011). To navigate these uncertainties, the notion of a "social contract" has emerged as a critical framework for understanding the origins of the complex relationship between politics and humanity. Philosophers such as Hobbes, Locke, and Rousseau have approached the concept of human nature through the lens of their respective societal contexts, with Hobbes and Locke emphasizing a static, hypothetical view, while Rousseau posited that human nature is subject to change and evolution through anthropological processes (Elahi, 2014)(Devine, 2000).

The critical theory of Herbert Marcuse states that technology does not operate in a vacuum but invariably influences the society in which it functions. Specifically, in the historical book "One-Dimensional Man", Marcuse offers a scathing critique on the advanced industrial society's use of technologies as means of engineering a passive population that is willing to conform to norms. Individuals in such societies, according to him, reach an ever increasing level of technological success, and such people become one dimensional because they use technologies as the ultimate, the only, model (Marcuse, 1964). This

stance gives rise to fundamental issues pertaining to the intersections of power which are wielded by technology and the contours of identity.

Technologies have evolved so rapidly that there is now a new way of orienting and socializing people, which has been referred to as “technopolitics.” This relates to the interplay of technology, politics and society and shows how society is structured in regard to technological progression. Nowadays, society is encountering new challenges and complexities as modern society’s evolution affects interactions between individuals and communities. It is important to understand these relations in order to tackle today’s issues as digital technologies become more and more universal.

The technological forces at play today have intensified the complexity of societal relationships, and humanity’s position under this “technological bombardment” appears increasingly entangled, shaping not only governance but also the very nature of human interaction on both individual and collective levels.As we transition into the digital age, the implications of Marcuse's critique resonate more than ever. The "Single-Person Society," a concept that emerges as a counter-narrative to Marcuse's one-dimensional man, challenges traditional perspectives on technology and individuality. In this framework, technology is viewed not merely as a tool of control but as a facilitator of individual empowerment and participatory governance (Rastovic, 1964).

After the industrial revolution, in the tumultuous decade of the 1960s, marked by student movements that reverberated across the globe, protests, resistance, and revolutionary fervor left an indelible mark on the political landscape, social structures, race relations, and national cultures. Amidst these transformative years, technological advancements gave rise to new debates. The ascent of the "New Left" alongside student activism converged with the publication of Herbert Marcuse's seminal work, "One-Dimensional Man," in 1964, solidifying its position as a potent manifesto within the zeitgeist of the "New Left" (Coomes, 2016). Marcuse scrutinizes the reduction of individuals to mere production entities within contemporary capitalist systems, highlighting the transformative impact of a one-dimensional perspective primarily focused on economic evaluation (Şan et al., 2007).

This article examines the concept of technopolitics through the lens of Herbert Marcuse’s critical theory, emphasizing the interplay between technological hegemony, individualization dynamics, and the pivotal role of interdisciplinary collaboration in shaping technopolitical paradigms. Drawing on Marcuse’s *One-Dimensional Man*, the study explores the profound impact of technology on all facets of human life and its intricate relationship with societal transformation. Marcuse critiques the reduction of individuals to mere units of production within contemporary capitalist systems, highlighting the transformative influence of an economically driven, one-dimensional perspective. By delving into the tension between “negative thinking” and “positive desires,” this analysis underscores the urgency of adopting interdisciplinary approaches to address the multifaceted challenges posed by technopolitics in an era marked by pervasive technological advancement.

2. BACKGROUNDS OF TECHNOPOLITICS

2.1. Technopolitics

Technopolitics is an interdisciplinary field dedicated to exploring the intricate interplay between technology, society, and politics. Scholars in this domain strive to elucidate the transformative effects of technological advancements on societal structures and political frameworks. At the core of technopolitics lies the governance and regulation of these innovations, which integrates research from a myriad of disciplines to address pressing issues influenced by technology. Key areas of concern include security, privacy, economics, social justice, culture, and environmental sustainability.

While technological advancements have undoubtedly enhanced convenience and efficiency in daily life, they simultaneously raise substantial concerns regarding security and privacy. For instance, digital tools, particularly the internet and social media platforms, facilitate unprecedented levels of communication and information dissemination; however, these innovations also engender vulnerabilities that can jeopardize individual privacy and societal security. Consequently, technopolitical research often addresses these multifaceted challenges, providing frameworks and recommendations for effective management strategies.

The earliest forms of social organization in human history originated from hunter-gatherer families. With the advent of agriculture, the need for organization evolved to encompass various requirements and expertise. In the initial stages, the foundations of diplomatic relations and conflicts between tribes often revolved around the theft of livestock, abduction of women, and competition for resources (Lak, 2019). During this period, political and economic power among tribes was largely determined by access to clean water, fertile land, and favorable climates, which were crucial for developing organized societies.

Basic engineering practices, such as water transportation, had significant political and economic consequences in ancient Egypt and Mesopotamia. These civilizations utilized their major rivers to implement irrigation systems, which increased agricultural productivity and sustained population growth. Consequently, a growing population led to enhanced military

power, and the fertile lands fostered loyalty to governance. The current technopolitical landscape is still exemplified by the critical role of water resources, which have historically determined societal development. Access to clean water is essential for health and productivity, yet disparities persist globally. Technological advancements, economic power, and political influence shape the availability of water, revealing the interplay between geographical factors and technological development. Policymakers must address the dual challenges of ensuring access to resources and managing environmental sustainability.

The Sumerians, a pivotal civilization in Mesopotamia, significantly influenced historical trajectories. Their religious beliefs and practices shaped various aspects of life in the Middle East, impacting governance, trade, and social interactions (Kramer, 1961). The Sumerians operated within a polytheistic framework, associating every object and event with multiple deities. This belief system allowed for a structured societal organization, where even laborers were effectively managed (Landsberger, 1943).

In contrast to historical technopolitical structures, contemporary technopolitics are increasingly shaped by advanced technological instruments. Modern mechanisms that govern behavior focus on enhancing organizational performance through various forms of expertise. Today, private companies, the public sector, and algorithms influence consumer habits and societal norms. Comprehensive societal control is achieved through social engineering approaches that impose perceived notions of the "right" and the "good." Data-driven, algorithmic frameworks create a facade of improvement and progress within society.

This strategic manipulation of behavior aligns with John Nash's game theory, which posits that the outcomes of competitive interactions depend on the established rules rather than chance (Nash, 1951). For instance, in a two-player game, the initial player's move dictates the potential for winning or losing, highlighting the importance of setting advantageous rules. This principle underlines how contemporary technocrats leverage structured systems to maintain control over societal behaviors, often presenting their data-driven initiatives as enhancements for human welfare.

Historically, the pursuit of happiness and consent has been a significant human endeavor. Philosophers such as Aristotle and Plato explored these themes, with works like Plato's "Republic" and Aristotle's "Politics" providing foundational texts on governance and societal well-being (Kolind, 2018). Aristotle's exploration of the ideal state and citizen reflects an enduring commitment to achieving the common good. In modern contexts, individuals willingly share vast amounts of personal data, forming the basis for data mining and big data analytics that drive contemporary decision-making.

The application of individual data for purposes ranging from consumer behavior to political choices exemplifies the challenges of accessing accurate information in the current era. Algorithms track habits and preferences, influencing choices in entertainment, purchasing, and political affiliation. Technopolitical dynamics harness these trends, leading to a decrease in physical interactions and increased reliance on digital communication.

Modeling societal behavior cannot be simplified to predictable mechanical processes. Society is a complex, interconnected system influenced by myriad changing parameters, making it difficult to understand behavioral relationships. Small, seemingly insignificant actions can have profound implications for societal dynamics, which can be characterized as chaotic systems. The complexity inherent in human decision-making necessitates a nuanced understanding of societal interactions.

In contrast to the common political landscape dominated by lawyers and politicians, engineers are increasingly integral to governance, particularly in countries like China, where technical expertise informs policy decisions (Kirby, 2017). The integration of engineers into leadership roles enhances the focus on technology-driven developments, fostering innovation and progress.

Ultimately, the founders of contemporary technopolitics are not without accountability. As societal dynamics evolve, the need for transparency and oversight in technopolitical processes becomes increasingly crucial. The interplay of technology and politics requires continuous examination to ensure that advancements serve the greater good rather than perpetuate inequities.

2.2. Technopolitical Ecosystems: Historical and Modern Perspectives

The first forms of social organization in human history were created by hunter-gatherer families. With the invention of agriculture, the need for organization evolved continuously to encompass different requirements and expertise up to the present day. In the early stages, the foundation of diplomatic relations and wars between tribes often revolved around the theft of livestock or crops, abduction of women, or competition for resources and status (Lak, 2019). During this period, political and economic power among tribes was determined by the availability of clean water sources, fertile land, and temperate climates. These necessities were essential for the development of highly organized societies. Basic and primitive engineering practices, such as the transport of water, which is a technical matter, had political, economic consequences in ancient Egypt and Mesopotamia. Civilizations like Egypt and Mesopotamia benefited from their great rivers by implementing

irrigation systems, which increased agricultural productivity and sustained population growth. Thus, with the growing population came increased military power, and the fertile lands resulting from water transport naturally led to loyalty to governance.

The Sumerians, one of the most significant civilizations to have emerged in Mesopotamia, where intensive interactions among societies and civilizations took place, played a crucial role throughout history. Sumerian religious beliefs and practices have had a decisive influence on all societies, religions, cultures, and various aspects of life in the Middle East, from birth to death. Many aspects of Sumerian culture can still be observed in trade, governance, war, peace, and law. Sumerian religious beliefs were centered around a polytheistic understanding of gods and cosmology. Sumerians associated every object, event, or phenomenon they encountered with thousands of gods (Kramer, 1961). Gods had an influence on daily life, trade, justice, and social and human relationships. The Sumerians, thanks to the societal engineering mechanism provided by a government centered around gods, were so well-organized that even a laborer in their organization, a man who collected reeds in their fields, could be controlled (Landsberger, 1943).

Today's founding technopolitics are enriched with technologic instruments different from Sumerians. Behind the any contemporary mechanism that controls what kind of behavior people will exhibit in increasing organizational performance that focuses on humans and encompasses different aspects of expertise in behavior control. Founding contemporary technopolitics can be a private company, the public sector, the state itself, search engines, or algorithms that control our shopping habits. Achieving comprehensive control of society by individually controlling people and directing their various habits is achieved through social engineering approaches that impose the "right" and the "good" on people. Data-driven, quantitative, rational, and freedom-enabling social media platforms create "smart" algorithms to fix "things" and improve society—or at least make us feel that way.

This is a game whose winner is determined at the beginning. This approach can be likened to John Nash's (Nash, 1951) game theory. In game theory, John Nash states that determining what is good and bad, who wins and loses depends on what the rules of the game are and who starts the game, rather than luck. Consider a two-player game. Let's say the first number is 30, and according to the rules, each player can subtract a number, which can be either 2 or 1, and the player who reaches zero wins the game. Let's also establish that the opposing player starts the game. These rules determine the winner. When the opponent subtracts 2, we subtract 1; when the opponent subtracts 1, we subtract 2. The number 30, which is a multiple of 3, will reach 0 on our turn. Thus, according to Nash, to be the constant winner of the game, it is necessary not only to play by the rules but also to set the rules in one's favor. Of course, game theory does not deal with games that involve just luck; in other words, games played with dice are beyond the scope of this theory.

John Nash, through his game theory, suggests that what is good and bad, who wins and loses, depends on what the rules of the game are and who starts the game. It is challenging to believe that luck plays a significant role in the 21st-century new world order, where the rules change almost daily. This is precisely why the founders of the new technopolitics, who claim to be decentralized, hold a significant advantage over humans or, rather, against humans. Today's technocrats, who claim that data-driven AI systems are created for "human betterment," manage to convince a large number of people to act in the desired direction and feel content.

The pursuit of happiness and consent has been a timeless human endeavor. Thinkers and philosophers as far back as the time close to the birth of Jesus, on the western coast of Anatolia, along the Mediterranean and Aegean shores, have delved into this topic. Aristotle and Plato, ancient Greek philosophers, contributed significant works in this regard. Plato's "Republic" and Aristotle's "Politics" are among the first comprehensive texts written on the functioning of the state and the happiness of society (Kolind, 2018). In his work "Politics," Aristotle, often considered one of the most influential philosophers in political thought, offers a summary of a lifetime's worth of experiences, thoughts, and observations. Aristotle delves into the nature of an ideal state, an ideal citizen, and the structure of an ideal education system (Coşğun, 2015). According to him, politics is the art of achieving human happiness and solving societal problems for the greater good. Plato, on the other hand, defines politics as the art of governing people with their consent. This is where the concepts of "happiness" and "consent" come to the forefront. In today's world, we willingly share a plethora of information, from our social media photos and personal details to our political beliefs. This act of sharing data willingly forms the basis for concepts such as data mining and big data analysis.

The utilization of individual data for specific purposes, ranging from shopping habits to political choices, lies at the heart of many contemporary issues. Technology plays a pivotal role in utilizing this data to offer shopping recommendations, suggest content based on our political views, and even attempt to understand our emotional responses. In today's world, post-truth approaches make it challenging to access accurate information. Social media algorithms track our habits, make content recommendations, and strive to make us happier. The culture of happiness and consent influences our choices in selecting TV shows, making purchases, and even determining our political affiliations. Technopolitical relationships harness these principles, guiding data with engineering practices, and leading society towards less physical interaction.

However, modeling society and the associated social relationships cannot be achieved with a simple machine prediction consisting of pendulums and strings. The values of society ensure its continuity over many interconnected or independent parameters that are constantly changing. This complexity makes modeling society and understanding behavior relationships quite challenging. Generally, considering the complexity of human and societal decision-making processes, small and seemingly insignificant actions and movements of individuals can significantly impact the entire society. Many different parameters influencing this dynamic movement complicate the understanding of the entire system. In this respect, society can be considered as a chaotic system. Chaotic systems are complex systems where sensitivity to initial conditions is crucial, and long-term predictions of system outcomes are unpredictable. The phenomenon known as the butterfly effect generally describes how small changes in the initial data of a system can lead to large and unpredictable consequences. Chaos Theory, an alternative approach developed to make sense of systems whose workings we do not fully understand, was put forward by Edward N. Lorenz, particularly in his work on modeling chaotic flow with nonlinear differential equations (Lorenz, 1963). In his work "The Essence of Chaos," Lorenz defined and explained chaos and its conditions (Lorenz & Haman, 1996). The concept he introduced into the literature as the 'Butterfly Effect' is also referred to as 'Sensitive Dependence on Initial Conditions.' According to James Gleick, the Butterfly Effect is not a coincidence but a necessity, emerging as a result of an inevitability stemming from the relationship between society's problems and its interactions with humans and nature.

Poincaré and Birkhoff examined the nonlinear, unpredictable dynamic problems of the physical world. Initially used in weather predictions, Chaos Theory has become a young and interdisciplinary academic field applied in a wide range of areas, from explaining cosmic events to understanding everyday life problems, with the discovery of similar features in many different systems (Aytaç & İlhan, 2008; Kesici, 2006). Chaos theory, which was first put forward in 1890 by Henri Poincaré, who discovered orbits that do not increase indefinitely, do not reach a certain peak, and are not periodic, was used effectively in daily life with the widespread use of computers (Bartky & Birkhoff, 1928; Poincaré, 1890).

3. MODERN TECHNOPOLITICS

The Industrial Revolution, originating in 18th century England and subsequently spreading to other European countries and North America, was significantly propelled by the invention of the steam engine by Scottish engineer James Watt (1736-1819). The advent of the steam engine transformed production processes, introducing steam as a reliable and powerful energy source independent of natural forces such as rivers, wind, and animals. However, the perceptions of development and political awareness varied among countries, influencing factors such as per capita income, an imperfect indicator of economic advancement.

This revolution led to a substantial accumulation of capital, as the quest for cheaper production methods diminished the value of labor. Capital leveraged cheap labor for mass production, fostering the development of concepts like competition and entrepreneurship. The mechanization of production altered not only people's lifestyles but also their working conditions, with factory workers facing longer hours and increased hazards due to dangerous machinery. The changes in mechanization and labor organization contributed to an increase in surplus value production. As Marx (1867) conceptualized, the generation of relative surplus value involved enhancing labor productivity, enabling workers to produce more within the same timeframe.

The aftermath of the Industrial Revolution saw capital focusing primarily on production, intensifying control over labor. These transformations unfolded within a new technopolitical ecosystem characterized by the application of scientific and technological advancements to production processes, the transition to mechanized production, and the emergence of factories that reduced the need for labor. The rapid developments in capitalist production processes prompted a transformation in technical labor, often disregarding environmental consequences. Factory operations caused pollution, adversely affecting living conditions.

Developing a technopolitical perspective for interdisciplinary solutions requires addressing historical, cultural, human, and environmental concerns, laden with cultural and engineering values. However, not all technological developments align with humanitarian progress; some may devolve into attacks on human dignity, as illustrated by certain dystopian scenarios. Although long-term international collaborations guided by technical expertise can facilitate societal development, many countries still lack the essential engineering competence, labor, and institutions to address fundamental issues. In such contexts, the pursuit of a perspective prioritizing technology and humanity often becomes enmeshed in intricate political complexities. Political entities in the West, representing socialist, social democratic, and liberal traditions, have played central roles in societal movements and struggles. Historical contexts include conflicts such as center-periphery dynamics, state-church relations, and labor-employer struggles, which continue to shape the distinct political traditions of socialism, social democracy, and liberalism.

3.1. The Technopolitical Ecosystem Created by the Industrial Revolution

The Industrial Revolution, originating in 18th century England and subsequently spreading to other European countries and North America, was significantly propelled by the invention of the steam engine by Scottish engineer James Watt (1736-1819). The advent of the steam engine transformed production processes, introducing steam as a reliable and powerful energy source independent of natural forces such as rivers, wind, and animals. However, the perceptions of development and political awareness varied among countries, influencing factors such as per capita income, an imperfect indicator of economic advancement.

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3.2. Navigating the Technopolitical Landscape: Shaping Governance and Democracy in the 21st Century

In the aftermath of World War II, Europe entered a significant period of reconstruction, during which new trends emerged. These trends emphasized the connection between the exit from Keynesianism and the development of low-income countries by high-income nations. Rather than relying solely on resource accessibility policies, a focus on enhancing individual and societal freedoms through capacity-building models gained prominence. Within this framework, Amartya Sen’s capability approach and Ronald Inglehart’s ideas on liberating values and democratization emerged as two crucial perspectives that prioritize individuals as the primary targets (Robeyns, 2005).

While classical economic development theories typically emphasize centralization, the paradigm of the 21st century advocates for personal capabilities and liberating values, asserting that individuals should be empowered to sustain the lives they deserve. In this context, the economic and political atmosphere of the 21st century can be understood as a technopolitical environment established for governance and citizen sovereignty. The emergence of artificial intelligence (AI) has introduced new dimensions to the technopolitical landscape. AI systems, particularly those utilizing machine learning and natural language processing, are increasingly embedded in governance and economic frameworks. These systems offer unprecedented capabilities in optimizing public services and enhancing policy implementation. However, they also present significant ethical dilemmas, particularly concerning accountability and the potential erosion of human oversight in critical decision-making processes (Pasquale, 2020).

Technological advancements have transformed the sharing environment since the early 21st century. The proliferation of mobile broadband connections and social media platforms, alongside new software, web platforms, and mobile applications, has accelerated processes of idea generation, discussion, decision-making, voting, media creation, and content sharing. This technopolitical ecosystem has made data generated from its components searchable and replicable. Technological progress has permeated every facet of our lives, enhancing the importance of the relationship between technology and politics over the past century.

Since the early 21st century, various technopolitical decisions related to the formation and management of digital ecosystems have emerged. Digital ecosystems, functioning as systems that communicate and operate through the internet and digital technologies, have altered how individuals interact and how workplaces operate. The rise of Industry 4.0 has integrated machines, devices, and humans, providing almost limitless information everywhere (Schwab, 2016). However, the expansion of networks complicates existing structures, and the chaotic nature of this new technopolitics makes predictability challenging.

Furthermore, data protection and privacy have become urgent issues that require technopolitical decisions concerning the formation and management of digital ecosystems. The collection and use of societal data in digital environments raise significant concerns, prompting discussions around regulations related to data protection and privacy. AI's role in digital ecosystems is profoundly tied to data analytics, where vast amounts of user data are processed to generate insights and predict trends. This raises urgent questions about privacy and the ownership of data, especially in an era where personal information is a valuable commodity. Regulatory frameworks must evolve to ensure that AI applications uphold ethical standards and protect individual freedoms, balancing innovation with the need for stringent data governance (Mendoza, 2022).

Historically, computers and the internet have been viewed as opportunities for strengthening democracy (Kurban, Peña-López, Haberer, et al., 2017). However, it has become evident that the internet reflects societal and political dynamics since its inception. While the potential of the internet to facilitate communication and organization exists, it has yet to yield sufficient democratic transformations. Currently, when combined with legal and political tools, internet-based communication methods offer limited technopolitical strategies to address democratic shortcomings. Technological advancements, technopolitical interactions, and the emerging ecosystem extend beyond mere transportation and communication. The concept of "technopolitics" must be assessed from various perspectives, encompassing urbanization, military, banking, and industrial sectors. The internet continues to represent a contested domain between the paradigms of freedom and security (M Rumold - Santa Clara L., 2015).

Since the early 21st century, technological expertise has played a role in addressing various local and global crises, leading to the emergence of communities, platforms, movements, and layers of activism. Within the representational paradigm, individuals often appear insignificant as political actors. Beyond voting, there is typically no direct connection between politicians and individuals; this disconnection can lead to a crisis of democracy when the political sphere becomes detached from the public (Chou, 2015). Larger-scale collective actions facilitate broader participation beyond traditional voting procedures, allowing individuals to engage in more extensive movements.

In Western political systems, connected individuals have become fundamental units for the networked society (van Dijk, 2006). While governments utilize the internet to reinforce traditional practices, the most significant changes within the technopolitical ecosystem are occurring from the bottom up. As empowered actors, individuals are emerging as key players in this new technopolitical era. The use of components of the technopolitical ecosystem, such as Twitter and Facebook, facilitates democratic participation. Events like WikiLeaks and the revelations by Edward Snowden exemplify individuals' capacity to question and influence political processes. Such actions allow individuals to bring sensitive information to light and aim to disrupt existing power structures.

Collective action can be defined as "facilitating individuals' contributions to collective efforts that generally seek public good" (Bennett & Segerberg, 2012). In this context, individuals contribute to the overarching narratives of main organizations that shape the spirit and themes of movements. Within the technopolitical ecosystem, the presence of individuals in collective actions and their relationships with institutional organizations exhibit similarities to "distributed leadership" (Nunes et al., 2014). The ecosystem quickly addresses the organizational and communication needs of actors, allowing political organizations to be established even with online tools and limited budgets. The technopolitical ecosystem accelerates processes of idea gathering, discussion, decision-making, and content creation, making citizen participation traceable.

The incorporation of AI in political processes has also transformed the nature of collective action and political communication. Campaign strategies now leverage predictive analytics and sentiment analysis to craft targeted messages and optimize voter engagement. While these technologies enhance political participation, they also risk exacerbating polarization and undermining democratic values. Cases involving the misuse of data in election contexts highlight the need for greater transparency and accountability in the deployment of AI-driven tools (Woolley & Howard, 2018).

Table 1: Summary of Key Themes in the Technopolitical Landscape.

Theme	Description	Implications
Historical Context	Post-World War II reconstruction in Europe; shift from resource-based policies to enhancing individual and societal freedoms.	Marked a transition in governance towards prioritizing human development, paving the way for participatory and capacity-building approaches in low-income and recovering societies.
Key Perspectives	- Amartya Sen: Capability approach emphasizing individual empowerment. - Ronald Inglehart: Focus on liberating values and democratization.	Theoretical frameworks encourage policies that prioritize human capabilities and value-driven democratization, reinforcing the importance of individual agency in governance.
Technological Advancements	Proliferation of mobile broadband, social media, and digital tools; transformation of communication and organizational practices.	Opened avenues for broader citizen engagement but also introduced challenges like misinformation and increased complexity in political systems.
AI and Governance	Use of artificial intelligence in decision-making, policy analysis, and public service delivery.	Improved efficiency and predictive governance, but raised ethical dilemmas around algorithmic bias, accountability, and transparency.
Collective Action	Emergence of new forms of political engagement beyond traditional voting; rise of grassroots movements enabled by digital technologies.	Empowered marginalized groups and facilitated rapid mobilization, leading to shifts in power dynamics and more responsive governance structures.
Privacy and Data Protection	Growing concerns around data collection and use; need for regulatory frameworks to protect citizens in digital environments.	Urgency for robust legal frameworks to safeguard privacy and data integrity, critical for maintaining public trust in digital systems.
AI in Political Processes	AI-driven tools reshaping political campaigns, voter targeting, and misinformation detection.	Enhanced personalization and efficiency in campaigns, but risks of manipulation and polarization demand regulatory oversight and ethical standards.
New Political Entities	Rise of political organizations that utilize digital platforms for decision-making and citizen engagement; examples include Podemos and Barcelona en Comú.	These organizations demonstrate how digital platforms can increase transparency, broaden participation, and challenge traditional political structures.
AI and Public Opinion	AI's role in analyzing and shaping public opinion through sentiment analysis and content recommendation algorithms.	Enabled real-time feedback for policymakers, but also raised concerns about echo chambers and the manipulation of public discourse.
Reconceptualization of Sovereignty	Need to reevaluate state sovereignty in light of global interconnections and technological changes; focus on international cooperation and governance frameworks.	States face pressures to adapt sovereignty models that balance national security with global governance in the digital age, ensuring relevance in a connected world.

The reality of this ecosystem became particularly evident during the social movements of 2011-2013 (the Arab Spring). When crowds gathered physically in urban areas, the power of social media enabled rapid global dissemination of demands. Internet-based information layers synchronized protesters' actions, while authorities monitored these processes, implementing both virtual and real measures. In recent years, digitally equipped and politically active youth have increasingly participated in political processes through these channels. New political parties in Spain, such as Podemos and Barcelona en Comú, have utilized the internet and social media to meet their communication needs (Tormey & Feenstra, 2015). Decisions within these political organizations incorporate online/offline citizen participation and enhance financial transparency through web platforms (Casero-Ripollés et al., 2014).

In response to the technopolitical ecosystem, not only nation-states but also international platforms and organizations (ranging from NGOs to multinational corporations) have begun developing new strategies for survival. This trend necessitates a reassessment of state sovereignty in the 21st century. Similar to the globalization processes that led to the emergence of

nation-states in the 19th century, a new understanding of state sovereignty requires the establishment of a legal and political framework that advances international relations.

This shift necessitates a transformation of traditional nation-state structures to accommodate the international actors of the 21st century. In this new world order, the political strategies developed must consider both the security needs of states and the expansion of international cooperation, thereby necessitating a reconceptualization of state sovereignty in the face of the digital revolution.

4. EXPLORING DIMENSIONS OF CONTEMPORARY ISOLATION: DIGITAL, SPATIAL, AND MEDIA PERSPECTIVES

The digital age, with its unprecedented connectivity, has enabled the creation of multiple virtual identities, often causing a significant disjunction between an individual's digital persona and their real-world identity. This disconnection fosters what is now commonly referred to as *digital loneliness*, a state characterized by superficial communication and a lack of meaningful emotional connections. As a dual process, digital isolation serves both as a platform for self-exploration and as a contributor to the erosion of reality, forcing individuals to navigate between self-discovery and existential disorientation.

Hegel's concept of alienation outlines a dialectical journey of self-creation and self-awareness, which Marx critiques by embedding it within the material structures of capitalism. For Marx, alienation is deeply rooted in the economic dynamics of production, contrasting with Hegel's more abstract philosophical approach. However, these perspectives are not strictly antagonistic. Instead, they complement each other, offering a holistic view of human experience that resonates profoundly in contemporary technopolitical contexts (Aydoğan, 2015). In these contexts, the dichotomy of "good" versus "bad" becomes a politically charged debate, reflecting how technological tools mediate societal norms and values. This mediation occurs within a dynamic technopolitical ecosystem, where political actors leverage technology to craft strategies that both reflect and influence societal change (Kurban, Peña-López, Internet, et al., 2017)

As the human experience evolves, so does the concept of culture. Traditionally defined as the cultivation of land and agricultural products, culture can now be expanded to encompass the myriad ways in which humans innovate, adapt, and transform their environments (Briggs & Bauman, 1992; Murdock, 1965). The rapid acceleration of change in the 21st century highlights this transformation, as humanity moves swiftly from the hunter-gatherer era through agricultural and industrial societies, culminating in today's information age. Some scholars, recognizing the magnitude of this shift, have termed the current period the *Fifth Industrial Revolution*, characterized by the integration of cyber-physical systems under the broader framework of *Society 5.0*—a concept introduced by the Japan Business Federation in 2016 to define a super-smart society that builds on previous societal paradigms (Noble et al., 2022).

However, the digital revolution has not been without its tensions. Social media platforms, initially celebrated for their democratizing potential, notably during pivotal events such as the Arab Spring, have since revealed their limitations. These platforms offered an alternative to the biases of traditional media, facilitating real-time, interactive engagement with global events. Yet, the initial optimism was soon tempered by the realization that these same platforms could be weaponized, as evidenced by the 2016 U.S. elections. Accusations of voter manipulation through social media tools highlighted the fragility of information integrity in a digital age (Sneed, 2020).

The generational divide further complicates the narrative. *Digital natives*—those who have grown up immersed in technology—approach these platforms differently from *digital immigrants*, who adopted technology later in life. This divergence is encapsulated in the metaphor of the "tweeting rabbit and the reading turtle," where the rapid pace of technological advancement often outstrips the capacity for critical reflection (Webster & Ruskin, 2012). The result is a fragmented media landscape, where the quest for immediacy undermines depth and the pursuit of novelty eclipses the value of enduring insights.

Amid these technological and social shifts, the concept of *placelessness* in technopolitics—once seen as liberating—now appears inadequate. The dynamics of data production and analysis dominate the technopolitical landscape, revealing the dual-edged nature of data: it can both unify and fragment. *Data activism* emerges as a critical force in this environment, bifurcating into two distinct forms. Proactive data activism aims to harness data for social and political empowerment, promoting equitable participation in technopolitical processes (Milan & Velden, 2016). In contrast, reactive data activism seeks to resist mass surveillance and safeguard individual privacy, often driven by grassroots movements (Milan & Gutiérrez, 2018). Within this framework, information becomes a form of power, capable of shaping narratives and redefining societal structures (Cukier & Mayer-Schoenberger, 2013).

The COVID-19 pandemic further accentuated the contours of this solitary, data-driven society. As physical interactions diminished, digital platforms became indispensable for both social engagement and economic activity. This shift compelled societies to reconsider long-standing assumptions about what constitutes public and private goods in political discourse. The pandemic underscored the urgency of developing innovative technopolitical tools that leverage data and artificial intelligence to address emerging challenges.

Ultimately, the interplay between technological advancements and social structures continues to reshape our understanding of reality. The rise of new epistemic cultures, guided by data activism, is transforming how we engage with information and evaluate its validity. In navigating this complex landscape, societies face the dual challenge of harnessing the transformative potential of technology while critically assessing its implications for human agency, social cohesion, and democratic governance. The stakes have never been higher, as the path forward will determine not only the trajectory of technological progress but also the core values that define our collective humanity.

4.1. Digital Surveillance and Power in the Single-Person Society: Spatial and Social Transformations

The concept of spatial scale is a critical tool for social scientists studying human activities on Earth. It allows for the analysis of complex processes and the interrelations between them, especially in understanding environmental and societal changes (Meentemeyer, 1989). Spatial scaling is also crucial for analyzing political phenomena, where processes operate at different levels, from local to global. Representative democracy, for instance, can be divided into social, regional, state, and international scales, all of which are shaped by hierarchical relationships with the state as a primary political actor affected by global economic interests (Hale et al., 2005)(Berber, 2003). Within the contemporary technopolitical landscape, these political scales are increasingly blurred as digital technologies allow for decentralized governance, enabling new forms of organization and political expression.

In the context of the single-person society, the state's role as a central actor is undergoing significant transformations. While historical power structures were often tightly bound by physical spaces—particularly before the Industrial Revolution—modern production transcends these boundaries, made possible by the digital realm. As a result, power dynamics become more fluid, and new forms of sovereignty emerge, where individuals can more easily organize, communicate, and even challenge traditional political structures (Sassen, 2006)(Bodemann & Yurdakul, 2006). This shift also highlights the growing influence of digital citizenship, as individuals increasingly engage in political processes through online platforms that offer participatory and decentralized opportunities.

Technological advancements have reshaped communication processes, facilitating the emergence of a new political space often referred to as "cyberspace." John Perry Barlow's "Declaration of the Independence of Cyberspace" emphasized this phenomenon, portraying cyberspace as a space beyond traditional geopolitical boundaries, where individuals are no longer subject to the same hierarchical controls. Scholars characterize this as the "third environment," an interconnected realm that combines elements of the natural and urban worlds through collective intelligence and digital interactions (Echeverría et al., 2020). This new environment fosters a more flexible, dynamic, and personalized interaction with politics and governance, where information flows freely and individuals are empowered to engage in social and political discourse.

At the social and regional levels, information technology has revolutionized both the organization of communities and the global visibility of movements. Through social media, individuals and organizations can more effectively mobilize and raise awareness on a variety of issues, challenging the relevance of traditional political institutions. The rise of slogans advocating for "governmentless management" signals a move away from conventional governance models, as citizens question whether traditional political parties remain necessary in an age of decentralized and digital activism (Mair, 2013). The increasing visibility of contentious politics on digital platforms further complicates the role of the state, which may no longer be seen as the central actor in political decision-making (Skrbis, 2008).

Despite the democratizing potential of digital spaces, there remains a latent risk of authoritarianism as states continue to centralize surveillance and control over information. The very tools that empower individuals to act autonomously also expose them to greater forms of surveillance and manipulation. In this sense, the single-person society occupies a paradoxical position in relation to power: it offers new freedoms while simultaneously subjecting individuals to more sophisticated forms of control. This duality reflects the tensions between individual sovereignty and the centralization of power in the digital age, making the governance of the single-person society a complex and potentially volatile issue.

4.2. Capitalist Loneliness and the Technopolitical Landscape

Capitalist loneliness offers a critical lens through which to examine the societal shifts brought about by capitalism, particularly in terms of how it redefines human relationships. Emerging in the late 20th century, this concept highlights the profound ways in which capitalism, through work and consumption, has altered interpersonal connections, leading to increased feelings of alienation. In capitalist societies, particularly those shaped by neoliberalism, individuals are encouraged to prioritize personal success and economic independence, often at the expense of collective solidarity and social bonds. This transformation fosters a sense of isolation, where relationships become increasingly transactional and instrumental.

In the technopolitical framework of the single-person society, this shift towards individualism is closely tied to the glorification of entrepreneurship. The idea of "freedom" in this context is often equated with self-exploitation, where individuals are encouraged to see themselves as both workers and entrepreneurs, constantly striving for success in a system that rewards individual effort. Marx critiques this notion, arguing that capitalism's emphasis on individual freedom masks its true purpose:

to maintain existing power structures through the illusion of choice and competition. As neoliberalism erodes collective identity, the worker is transformed into an entrepreneur, perpetuating a cycle of self-exploitation and reinforcing the capitalist system.

This transformation is further complicated by the role of technology, which not only mediates social interactions but also reinforces capitalist dynamics. The rise of digital technologies has led to new forms of labor, where individuals, or "prosumers," engage in the creation of content and data, thereby contributing to the economic value of platforms and advertisers. This process, however, is not without its contradictions. While the internet promises empowerment and the democratization of communication, it often reinforces existing power inequalities. The personal data generated through online interactions becomes commodified, further entrenching capitalist control and creating artificial demands for consumption.

Moreover, as traditional forms of media decline, the rise of single-person media—where individuals create and disseminate content directly through digital platforms—marks a shift in how communication takes place. This transition, while appearing to empower individuals, often serves the interests of capital by commodifying attention and engagement. The media landscape, driven by algorithms and data analytics, personalizes content to reinforce consumer behavior, creating a false sense of autonomy while shaping individual identities and desires based on market needs. In this environment, communication becomes less about collective needs and more about economic incentives, where attention itself becomes a valuable commodity.

The increasing commodification of personal data underscores the need for a critical engagement with the systems that govern digital interactions. In the single-person society, individuals may perceive themselves as free and autonomous, yet they are embedded in a complex web of surveillance and control. The illusion of freedom perpetuated by digital technologies masks the underlying power structures that shape the way individuals interact with one another and with the state. As such, the technopolitical landscape of the single-person society reflects the complexities of power, freedom, and surveillance in the digital age. The transformation of communication and social dynamics within this context highlights the intricate relationship between technology, capitalism, and societal identity, and underscores the importance of critically examining the forces that shape our digital lives.

Table 2: Summary Table: Digital Isolation, Technopolitical Dimensions, and Capitalist Loneliness

Dimension	Key Themes and Concepts	Outcomes
Digital Isolation	-Disconnect between digital identity and real identity -Emotional loneliness	Paradox of social connection and loneliness.
Capitalist Loneliness	-Impact of capitalism on human relationships -Changes in consumption and work habits	Increased loneliness due to individualization.
Technological Effects	-Interaction between politics and technology -Validity of narratives	Influence on information accuracy and governance.
Activism	-Proactive and reactive data activism	Empowerment and resistance potential.
Media and Viewer Role	-Viewer-prosumer dynamics -Information dissemination	Complexity of media consumption and value creation.
Surveillance and Control	-Control by capitalist structures -Data commodification	Socio-economic inequalities behind digital equality.
Transformation Potential	-Importance of critical engagement -Democratization of media	Need to understand the relationship between technology and social structures.

5. TECHNOLOGICAL HEGEMONY: A COMPARATIVE EXPLORATION OF MARCUSE'S ONE-DIMENSIONAL MAN AND THE CONCEPT OF THE SINGLE-PERSON SOCIETY

Marcuse's analysis in *One-Dimensional Man* offers a profound critique of the technological and bureaucratic structures that define advanced industrial societies. In these societies, technology and bureaucracy are aligned with the interests of private capital, often operating under the guise of neutrality. Marcuse argues that this "neutrality" masks the reality that these systems ultimately serve to perpetuate the dominance of capitalist interests, reducing the scope for critical thought and

alternative possibilities. His concept of technological rationality demonstrates how, in these societies, technological advancement often leads to a one-dimensional reality where individuals become passive participants in the dominant system, unable to imagine or pursue alternative futures.

In the context of the *Single-Person Society*, Marcuse's theory of technological rationality undergoes a shift. The *Single-Person Society* disrupts the traditional structures Marcuse describes by facilitating individual freedom and autonomy, offering new avenues for critical thinking and alternative perspectives. Rather than reinforcing a monolithic vision of society, this new framework allows individuals to experience distinct and unique perspectives, thereby encouraging personal agency and challenging the passive acceptance found in advanced industrial societies.

However, Marcuse's critique of class structure—particularly his observation of the unification of the bourgeoisie and proletariat—takes on a new dimension in the *Single-Person Society*. He argues that technology fosters a "rich society" that promises happiness and contentment, securing individuals' consent to the existing system. In this environment, the satisfaction of individual needs is presented as a form of freedom, yet it comes at the cost of critical engagement. As individuals embrace the technological system, they become passive agents, and dissent diminishes. This culture of consent, perpetuated by technological advancements, leaves little room for resistance, reinforcing Marcuse's concept of alienation.

Marcuse's emphasis on technology as a tool of control is critical to understanding his thesis. He suggests that technology, through its role in organizing and directing social relations, operates as a mechanism of domination, maintaining the power of the established system. The technical apparatus becomes a means of enforcing non-personal rules, creating a pervasive and often invisible form of control that extends beyond the immediate realm of production into cultural, political, and economic spheres. However, this framework does not fully account for the evolving role of technology in contemporary society, where technological advancements increasingly blur the boundaries between production and social interaction.

Today's technology is not limited to the industrial processes Marcuse primarily engages with, nor is it confined to machines that serve practical purposes. Technology has become deeply embedded in the organization and evolution of social relationships and dominant thought patterns. The rise of digital technologies, for example, has radically transformed communication and work practices, creating new forms of connection and interaction that challenge traditional power structures. While Marcuse viewed technology as a centralizing force, contemporary technological advancements—especially in the digital realm—offer individuals greater access to communication, information, and self-expression. These tools empower individuals, yet they also carry the potential for greater manipulation, as the structures of control shift and adapt in response to these new technologies.

The implementation of modern technologies raises important questions about the relationship between economic power and social change. As technology becomes more accessible and affordable, it no longer requires the vast resources once necessary to maintain and expand technical apparatuses. Marcuse's theory of technological dominance must be reconsidered in light of this shift. In today's world, the power of technology is not just determined by its capacity to control but by its ability to democratize access and reshape social structures. The proliferation of digital platforms, social media, and other technologies of communication has created new opportunities for political engagement, while also reinforcing the individualistic, consumer-driven values that characterize the *Single-Person Society*.

Habermas critiques Marcuse's view, arguing that technical reason retains its political content within social systems, suggesting that the development of technology is not neutral but intrinsically linked to social and political goals. In the context of the *Single-Person Society*, technology facilitates a culture of happiness and consent, where the focus shifts from collective action to individual satisfaction. This shift, while seemingly empowering, also deepens the paradox of societal demands. The increasing expectation for individual fulfillment in a world driven by technological advancements creates a tension between personal freedom and the rationality imposed by the system.

Ultimately, the *Single-Person Society* presents a complex landscape where technology fosters new freedoms while also deepening the rationalization of control. By offering individuals new avenues for self-expression and participation, it challenges traditional forms of governance and societal structures. Yet, it also raises critical questions about the relationship between technology, individual agency, and power, inviting a reevaluation of how technological advancements shape not only our lives but the very nature of social organization itself. This new technopolitical reality necessitates a more nuanced understanding of the roles technology plays in both enabling and constraining individual freedom.

6. RESULTS OF COMPARATIVE ANALYSIS: ONE-DIMENSIONAL MAN BY MARCUSE AND THE IMPACT OF INDIVIDUALIZED SOCIETY TECHNOPOLITICS

This section explores the evolution of the single-person society, shaped by the widespread availability and accessibility of emerging tools and technologies, particularly artificial intelligence. Digital social innovation, underpinned by information technology, facilitates more efficient and proactive social service processes. It also fosters greater individual participation in the design and management of these processes, aligning them with personal needs and goals.

The technopolitics of a single-person society, which emerges from a reconfiguration of production methods, offers a viable alternative to traditional industrial paradigms. This new technopolitical framework emphasizes three core principles: human-centricity, sustainability, and flexibility. These principles aim to improve well-being through innovative production practices and more personalized societal structures, enabling individuals to engage in more meaningful ways with the systems that impact their lives.

The social, environmental, and societal implications of this restructured technopolitical landscape are crucial for achieving authentic democracy and promoting sustainable, inclusive growth. By focusing on these dimensions, a more transparent and equitable society can be cultivated in the medium and long term. Particularly significant is the role of "digital natives" and "digital migrants," whose engagement with the new technological landscape is key to actualizing the potential of the single-person society. Their ability to deliver tailored solutions is central to enhancing human welfare in this context.

In this new societal paradigm, "smart bridges" exemplify the intersection between Society 5.0 and Industry 5.0. These initiatives promote both digital and green transformations, suggesting a comprehensive strategy to address prevalent social challenges. A key theme in this shift is the need for interdisciplinary collaboration, knowledge democracy, and the fostering of innovation within a technopolitical system that supports the individualization of society.

The successful implementation of technopolitics in the single-person society requires a multidisciplinary approach, involving educational and research institutions in this transformative process. As such, organizations and nations that champion new technopolitical strategies play a pivotal role in the broader economic and social development on a global scale. To meet the demands of an increasingly complex world, there is a need for a holistic perspective that considers not only economic growth and productivity but also knowledge creation, the emergence of new professions, and wealth generation.

A critical perspective within this analysis advocates for the recognition of the environment as a collaborative partner in innovation rather than as a resource to be exploited. It stresses that the technopolitics of a single-person society must foster social innovations that span across multiple sectors and interdisciplinary fields of study. Such innovations are not confined to technological advancements but extend to social and environmental reforms as well.

This rethinking of technopolitics also revisits Marcuse's concept of "technological domination," as presented in his seminal work, *One-Dimensional Man*. Marcuse's theory of technological dominance, first explored in his 1941 article *Some Social Implications of Modern Technology*, offers valuable insights into the current technopolitical landscape. He initially argued that National Socialism represented a mechanized economy that leveraged technological efficiency to uphold totalitarian control. In Nazi Germany, technological advancements were not merely tools of production but mechanisms of political control. Marcuse observed that technology in this context played a role in reinforcing oppressive systems by manipulating human behavior, a theme that resonates in contemporary analyses of technological power (Marcuse, 2004).

Marcuse's critique of the mechanized control exerted by technology is particularly relevant today, as we continue to grapple with global crises, including the ongoing pandemic. In a world increasingly dominated by digital technologies, politics and life intertwine in complex ways. The political environment of the 21st century is deeply shaped by these technological developments, with political discourse often blending with cultural and personal narratives. This connection between life and politics can be traced back to philosophical inquiries from figures such as Plato and Socrates, who explored the persuasive power of rhetoric in shaping political realities.

The concept of sustainable development plays a central role in this discourse, particularly in terms of how technology can be harnessed to address fundamental human needs while preserving the environment. Sustainable development goes beyond survival, requiring comprehensive policies that balance human needs with ecological preservation. The concept of "democratic social engineering" is vital in this context, ensuring that the state adopts policies that prioritize ethical considerations in technological and social development. Without such a framework, private entities may exploit technological advancements for profit, exacerbating social inequalities and environmental degradation.

In this context, the notion of engineers' role in societal development comes to the forefront. The rapid advancement of technologies, particularly those related to Industry 4.0, necessitates reforms in engineering education. Engineering schools must address the increasing specialization within the profession while also emphasizing the intersection of politics and technology. By integrating political awareness into engineering curricula, future engineers will be better equipped to contribute to societal progress through their expertise. These reforms will not only enhance the professional development of engineers but also promote their active engagement in political decision-making, thus enabling them to contribute to the sustainable and equitable development of society.

Technological innovation is rarely devoid of challenges. As new technologies emerge, so too do unforeseen consequences. Policymakers must navigate the ethical dilemmas and potential risks associated with these innovations. The concept of democratic social engineering offers a guiding framework for addressing these issues, emphasizing the role of engineers in

creating solutions that benefit society as a whole. This paradigm shift invites engineers to reconsider their role in shaping the future, not only through technological advancements but also through active participation in the political and social spheres.

In conclusion, this analysis highlights the profound relationship between technology, politics, and society in the context of the single-person society. Drawing on Marcuse's insights into technological domination and integrating them with contemporary understandings of technopolitics, the discussion underscores the need for interdisciplinary collaboration and ethical considerations in shaping the future. As we continue to navigate the challenges of an increasingly complex world, the technopolitics of a single-person society offers a promising pathway toward a more inclusive, sustainable, and democratic future.

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UTILIZING TEXT MINING TO EXTRACT KNOWLEDGE AND CLASSIFY INFORMATION IN INDUSTRIAL ENGINEERING

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ABSTRACT

Purpose- In the modern information age, organizations face an overwhelming amount of textual data from various sources. The true potential of this data is realized when transformed into actionable knowledge. This study aims to create a text-based model for information classification and knowledge extraction in industrial engineering.

Methodology- The research follows a descriptive-survey approach, employing text-mining techniques to analyze a comprehensive dataset of scientific research articles from the Science Direct database between 2015 and 2020. Data preprocessing was performed using Excel, while analysis was conducted with MATLAB software. The proposed model employs the nearest neighbor and support vector machine algorithms for robust text classification and knowledge extraction.

Findings- The study demonstrates the model's effectiveness in systematically extracting valuable knowledge from diverse textual sources. It shows that this approach can facilitate information extraction without compromising data integrity, thereby contributing to knowledge management practices in industrial engineering.

Conclusion- The text-based model developed in this study provides a reliable method for extracting knowledge from extensive textual datasets. The approach can be applied to other fields beyond industrial engineering, indicating its broader relevance and utility in the contemporary information age.

Keywords: Text mining, knowledge extraction, industrial engineering, data preprocessing, support vector machines.
JEL Codes: C55, L23, O32.

1. INTRODUCTION

Knowledge management offers new approaches in response to the challenges faced by organizations to increase the effectiveness and efficiency of their processes. At the same time, it plays an essential role in the maintenance and continuity of organizational innovation. The paradigm that dominates the activity space of organizations considers knowledge management as the axis of organizational performance in achieving more sustainable competitive advantages. Meanwhile, knowledge creation is not only the first key step in most knowledge management measures but also creates extensive requirements in the next steps of the knowledge management process. This issue has made the issue of knowledge creation an important area in knowledge management processes (Geisler and Wickramasinghe,2009)

On the other hand, to the advancement of technologies and the widespread use of information and communication technology in organizations, as well as their increasing integration of electronic systems, the amount of electronic information has increased. Quick and accurate access to important and necessary resources has become a main concern in using these sources of information. The main reason for paying attention to the knowledge of text mining is the large amount of available data that must be extracted from this information. The science of text mining is a part of the superior science that has created a revolution in the age of technology. It can be said that text mining can be used in any space where data is produced. Textual information processing by machine learning method, NLP natural language processing, and intelligent information retrieval were considered from the beginning regarding structured information, and then a branch of science appeared called data mining. In any case, today we are faced with a large amount of information, and due to the abundance and diversity of this information, checking and analyzing the information is a difficult and time-consuming task.

In this way, useful information can be extracted and used in the combination of features to produce a subset of efficient features that provide the best and most useful features without interfering with the information. This article aims to present a model based on text mining for information classification to extract knowledge from various scientific texts using the SVM and K-NN algorithms.

To achieve this, the paper is structured as follows: The next section reviews the literature on data mining and text mining, highlighting their intersection and relevance to organizational innovation. Following this, the methodology section describes the proposed model and the algorithms used, specifically SVM and K-NN, detailing their implementation for text classification. The discussion section interprets the results, explaining how text-mining techniques and particle optimization methods for data mining were utilized. Exploring and experimenting with various optimization techniques can further enhance classification performance, reduce computational costs, and lead to more robust and effective information classification and knowledge extraction systems.

2. RESEARCH LITERATURE

2.1. Data Mining

In today's era of rapid information and communication expansion, an immense volume of data including numbers, satellite images, photos, and text is continuously proliferating. Access to information is no longer merely a necessity but is recognized as a potent force, emerging as a crucial factor in production dynamics. On the other hand, a big difference in data production processes, such as the paper-based analog method and computer-based digital method, has made the use of data mining more important. Many solutions have been presented to collect, store, organize, and manage information and achieve more valuable results (Romero, Ventura, Pechenizkiy, and Ryan S.J.d. Baker,2010). Data mining is one of the recent developments in data management technologies. Data mining is a set of techniques that allows a person to extract valuable hidden information from the mass of data. It can be said that in scientific and medical studies, the nature of data mining is not considered a new technology because extracting information and knowledge from abundant data has a long history. However, what has led to the interest in this approach is the convergence and sharing of several disciplines, which has created excellent conditions for data mining in the world of science, business, and economics for the user. It can be said that the field of statistics is very important because without statistics data mining has no concept (Gupta, Vishal, Gurpreet S Lehal,2009).

Data mining is a new field of science that has been realized by conducting research in the fields of statistics, machine learning, and computer science (especially database management). One of the most important fields is classical statistics, which includes concepts such as regression analysis, standard distribution, standard deviation, variance, cluster analysis, and confidence intervals. Therefore, it can be said that classical statistical analysis plays an important role in data mining techniques. The next field that is directly related to data mining is machine learning algorithms. Machine learning algorithms can be called the evolution of artificial intelligence because machine learning is a community of statistical analysis and innovative methods of artificial intelligence, and by allowing computer programs to use statistics to understand its concepts and methods Artificial intelligence initiatives work to achieve the goal.

2.2. Text Mining

In today's world, a significant portion of our knowledge exists in the form of audio, video, and text. To unravel and derive insights from this wealth of information, individuals must comprehend the essence of the data and process it effectively to uncover interconnections between concepts. In the realm of this discipline, terms such as "text analysis," "exploring textual data," and "knowledge discovery in text" are commonly used.

Text mining operates similarly to data mining, albeit with a notable distinction: while data mining tools are tailored for structured database data, text mining excels in handling semi-structured or unstructured data, such as emails, full-text documents, and HTML files. Consequently, text mining emerges as a superior solution for organizations grappling with diverse data formats. However, it's noteworthy that the bulk of research and resources have traditionally been devoted to data mining techniques focused on structured data (Hotho, Andreas, Nurnberger, Andreas, Paab, Gerhard, 2005).

2.3. The Difference Between Data Mining and Text Mining

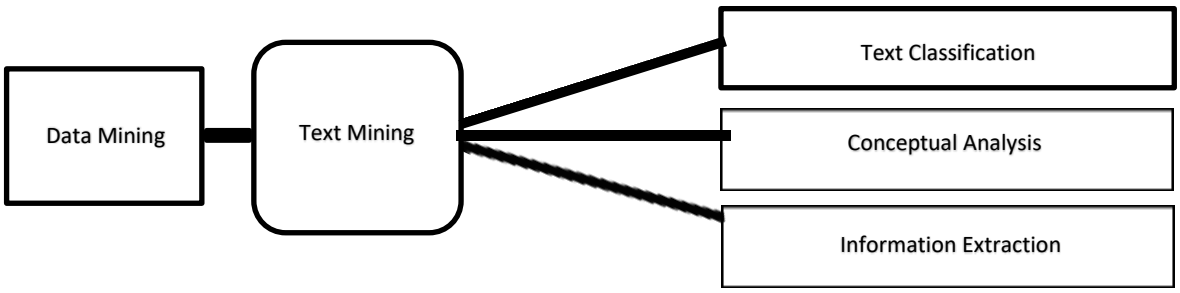
Data mining and text mining both seek to discover knowledge from data. Now the question arises, what is the relationship between data mining and text mining?

Databases can be an example of structured data; But text mining deals with texts that are mostly unstructured, such as web pages, notes, invoices, and emails, or semi-structured texts, such as HTML and XML pages. Therefore, in text mining, to extract information, the texts must first be structured by methods.

As a result, the text itself is data and text mining is one of the sub-branches of data mining. The use of data mining on text gave rise to another branch of artificial intelligence science called text mining. In text mining, because it works on text, natural

language processing methods should be used. In text mining, pre-processing tasks are performed using natural processing methods, and processing tasks are performed by data mining. (Romero, Cristobal, Sebastian Ventura, Senior, 2010)

Figure 1: Data Mining and Text Mining (Relationship)



2.4. Text Mining Process

Text mining is done in the following three steps:

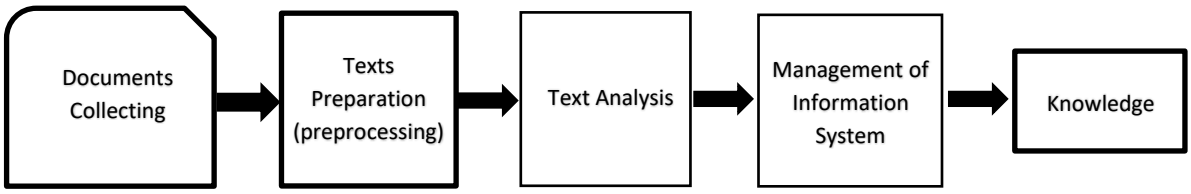
Preparing the text- The database on which the text mining process is supposed to take place is selected with the help of suitable software and performs the cleaning and preliminary processing of the text.

Text processing- This method uses natural language processing and data mining algorithms (such as decision trees, neural networks, and genetic algorithms) and data preparation and compression to detect hidden information.

Text analysis- In text analysis, the obtained data are evaluated to check the correctness of knowledge discovery. (Zong and his colleagues,2021)

The purpose of performing these steps is to extract data limitations and discover the strengths and weaknesses of the presented algorithm.

Figure 2: Text Mining Process



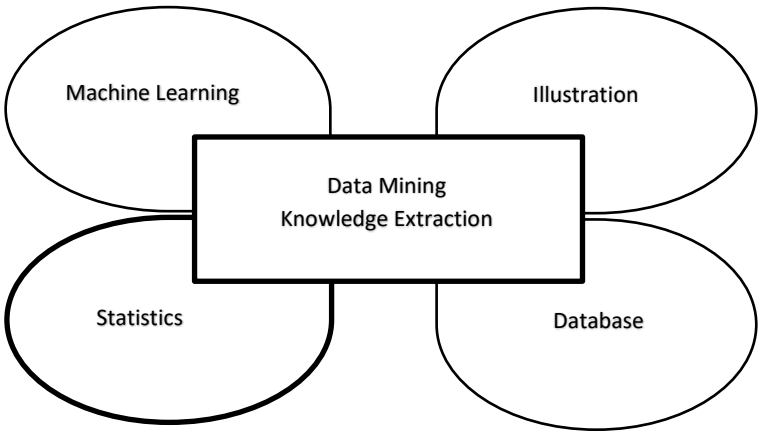
2.5. Discover Knowledge

Knowledge is extracted by categorizing information. Knowledge discovery is related to the entire knowledge extraction process; including how data is stored and accessible, how to analyze huge data sets using efficient and scalable algorithms, how to interpret and visualize results, and how to model and support interactions It is between man and machine.

Knowledge discovery is done in two ways:

- Data mining or extracting knowledge from databases.
- Text mining or extracting knowledge from the text (Hotho, 2005).

Figure 3: Effective Factors on Knowledge Extraction



2.6. Research Background

Ali Soltaninejad and Mohammad Ahmadinejad (2016) in research titled: Text mining of computer engineering articles based on the documents retrieved from the Web of Science database using the famous K-means algorithm to create an algorithm for extracting Persian words have given. The method of this research is a descriptive-analytical type, which was carried out by a survey method and considered the text mining approach. The research community was the computer engineering degrees indexed in the Web of Science database, which reported 6186 records in the period from 2004 to 2014. The collected data were analyzed using Heist Site and Excel version 2013 software as well as RapidMiner version 7.3 software. The results of the research showed that using the words selected as keywords in the clusters can help the user save time and retrieve relevant information.

Seyed Alireza Mir Mohammad Sadeghi and Mehdi Moghan (2014) in research titled Examining the Place of Data Mining in the Process of Knowledge Management and presenting a conceptual model for extracting knowledge presented a systematic process for the principled use of many data sources. This approach aimed to leverage a multitude of data sources effectively to enhance organizational decision-making processes.

Ahmed Agha Kardan and Mina Kihaninejad (2013) in research titled Providing a Model for extracting information from Text documents, based on Text mining in the field of e-learning, examined the types of text mining methods and how to combine and use them in the field of e-learning.

Zeng and his colleagues (2016) in an article investigated sentiment prediction by text mining using particle swarm optimization based on a feature selection search. Sentiment prediction by text documents and in medical text mining using feature selection based on particle swarm search as an important topic of machine learning to gain insights from unstructured texts has gained new popularity in the healthcare industry. Text mining has been one of the basic data analysis methods for predicting emotions for a long time. One of the popular pre-processing steps in text mining is converting the text string into a word vector, which is represented as a thin matrix with high dimensions. This sparse matrix is a computational challenge to induce an accurate sentiment prediction model. Feature selection is a popular dimensionality reduction method that provides a subset of all features of the sparse matrix, which is predicted to increase the accuracy and precision of the model. In this article, a new feature selection method called search-based swarm optimization (OSS-FS) is applied. This method is a group of search functions that selects an ideal subset of features for increasing classification accuracy.

Song and his colleagues (2015) investigated the use of learning-based network resources for automatic text classification. In this article, a new learning class using a resource allocation-based learning network (SLRAN) is presented for text classification. Considering learning progress, SLRAN is divided into a preliminary learning stage and a refined learning stage. In the first stage, a hierarchical K-Means method is used to reduce the sensitivity of the input data and to create the initial algorithm from the hidden layers. After that, a new criterion for adjusting the centers of hidden layers dynamically is proposed. In the last phase, a least squares method is used to increase the convergence rate of the network and improve the classification ability. Such an approach based on learning and its aggregate structure reduces the computational complexity of the network and increases its learning ability. To implement SLRAN for text classification, a semantic similarity approach that reduces the scale of neural network input and hidden meanings between text features is used. Data sets of 20 expertise groups have been tested in experiments and extensive experimental results show that the dynamic learning process of SLRAN improves its classification function.

3. DATA AND RESEARCH METHODOLOGY

This research utilized a blend of SVM and K-NN algorithms, with MATLAB software for data analysis. The study involved 51 English-language scientific articles within the realm of industrial engineering. The selection of English articles was influenced by software constraints. Each criterion was weighted using a scoring system (1=not at all, 3=weak, 5=average, 7=good, 9=very good), and repetition within criteria was addressed by removing duplicate articles.

To validate the model, collected articles underwent scrutiny which details such as authors' names, affiliations, references, journal titles, and submission/acceptance dates were excluded to ensure impartial assessment. University professors served as experts in evaluating the articles based on predefined criteria.

4. FINDINGS AND DISCUSSION

It assigns natural language texts to a previously introduced category based on the content of the text. The work procedure is such that in the first step, data is pre-processed using natural language processing techniques, and the obtained results are interpreted with the help of a machine learning algorithm. The machine learning algorithm consists of two phases, training, and testing, in the training phase, previously defined categories are used for machine learning, and it specifies the meaning of each category. In the test phase, unknown documents are given to the system. The system automatically classifies those data based on the greatest similarity. In the modeling of the machine learning algorithm, choices must be made about the type of training data, the objective function, its display, and an algorithm for learning. Selection of features and samples is one of the important tasks for learning algorithms.

Linguistic Preprocessing- To implement the weighting algorithm, several linguistic pre-processing is needed, which is a matrix of document vectors. The failures of the document that lead to its constituent sentences are: Finding the root of words and removing redundant words.

Remove Redundant Words- Words that connect words in texts and have many uses, such as "if", "and", "or", although these words are highly used, have little semantic value, and for this reason, they are removed in the pre-processing phase. The process of removing these words is such that a list of words is prepared in advance and after seeing these words in the text, they are removed from the document.

Finding The Roots of Words- Exploring the roots of words involves condensing words to their foundational roots. For instance, "computing," "compute," and "computer" all trace back to the root "compute." This process simplifies understanding and categorization. However, it's noteworthy that information retrieval systems typically don't employ root-finding techniques. One prominent root finder algorithm in the English language is the "Martin Porter" algorithm.

Feature Extraction- The operation that takes place on the data to discover its specific and unique features is called feature extraction. In this research, important words are extracted according to textual data.

Create The Final Document-Dictionary Matrix- After discovering the features, we use a matrix of 0 and 1 to train the recognition system, whose columns represent the extracted features, and each row represents a pattern.

Data Reduction- In this research, feature selection and combination algorithms have been used with the help of the IG criterion to weigh the data and remove inappropriate data.

$$IG = P(t_k, C_i) \log \frac{P(t_k, C_i)}{P(t_k) \cdot P(C_i)} + P(\overline{t_k}, C_i) \log \frac{P(\overline{t_k}, C_i)}{P(\overline{t_k}) \cdot P(C_i)}$$

The Information Gain formula helps identify how much information a term provides about the class, which is essential for feature selection in text mining and classification tasks. Higher IG values indicate terms that are more informative about the class, helping to reduce data by focusing on significant features.

4.2. Classification Assessment

To evaluate the obtained results, we use the criterion of accuracy and the amount of data reduction.

4.2.1. Experimental Results

All the tests have been run on a machine with a 4.0GHz CPU and 16.00 GB RAM, the operating system used is Windows 10. The proposed method has been implemented in MATLAB R2013a. In the next sections, the data set and the results of the implemented tests are explained.

4.2.2. Data Collection

In this research, 51 scientific articles in English in the field of industrial engineering, which contain scientific-research articles, were used. One of the reasons for choosing English articles was software limitations. To give weight to each criterion, options were assigned to those options that each option has a specific score (1=not at all, 3=weak, 5=average, 7=good, 9=very good) and to reach the desired answer to the questions Repetition was considered in the criteria, and in case of occurrence, the selected article will be removed from the research process. The selected articles were model validation. To validate the model, the collected articles were reviewed by researchers, and information such as authors' names, authors' information, references, journal names, and date of submission and acceptance of the article were removed to better review the articles. After preparing the articles, their evaluation criteria were evaluated by different researchers.

4.2.3. Evaluation Method

In this research, only words are not enough, and key phrases are also considered. After the keywords and phrases were identified for each criterion, it was found that there were similar keywords and phrases for some criteria, as a result, some special attributes were recognized as common keywords and phrases between several criteria. Finally, after removing similar traits, 121 traits were selected for this research. These 121 keywords and phrases are the criteria that the software should use to perform the learning and testing process.

As stated earlier, one of the goals of this research is to present a model that can be used to evaluate a large volume of articles based on a series of predetermined criteria, and the articles that meet these criteria should be distinguished from the articles in which these criteria are not met, therefore, in this research, classification methods have been used to achieve this purpose. Because in this research, data with an imbalance in the class was used, the accuracy measure cannot have a completely correct evaluation of the created models. For this reason, measures such as sensitivity, accuracy, or ROC curves should be used.

Among all the methods available for classification, three methods of Bayesian, Auto MLP, and k nearest neighbors were used (the reason for using the above three models is that after the text processing stage, the records that are used to perform the stage Data-mining is in hand, they have many special features, for this reason, one should use models that have a high ability to use this type of records and can obtain acceptable answers) and to validate the model The cross-validation method and ROC diagram have been used, and finally, bagging, “ADABOOST “and voting techniques have been used to improve the classification performance.

The results obtained from the application of Bayesian, Auto MLP, K nearest neighbor, and improved methods of these methods are shown in tables 1, 2, 3, and 4 (disturbance tables).

Table 1: Disturbance Matrix (Method of BAYESIAN)

	The second category (Prediction)	The first category (Real)	Class accuracy (percentage)
The second category (prediction)	6	2	75
The first category (real)	4	6	60
Level of sensitivi (Percentage)	70	75	-

According to Table number 1, the model placed 6 articles in the second category (articles that did not meet the criteria) which are really in the second category data (professors and doctoral students put these articles in this category), and also 4 articles were placed in the first category (articles in which the considered criteria were observed) and these articles were placed in the second category by experts. On the other hand, this model has placed 2 articles in the second category, and these two articles have been placed in the first category by the experts and have placed 6 articles in the first category, and the experts' opinions about These are 6 similar articles. According to the above explanation and the percentage of the values in the table, the level of sensitivity and accuracy of the classes is also clear in the last row and column of Table 2 (other tables have a similar interpretation).

4.2.4. Test Review

After performing the pre-processing steps and selecting the features and samples in the text classification system that was explained in the previous parts, it is time to implement and compare the classification algorithms. The tests performed using two classification methods (SVM and K-NN) can be seen in related tables. These results indicate the improvement of system performance after using the proposed method, especially using SVM as a classifier.

In Tables (2 and 5), the performance of basic learners has been implemented on 4 different datasets and the accuracy of classification and the amount of data reduction have been shown. As can be seen, in most cases the results show improvement in classification performance. This increase in efficiency is about 3%, which is more in SVM than in other classifications. As can be seen from the results in the table, it can be said that the proposed method has a better efficiency for data classification compared to using feature and sample selection separately. In addition to the increase in accuracy, we see a reduction in data that has a significant effect on speeding up the learning stage. For example, in the DVD dataset, the classification accuracy using SVM has increased from 0.78 to 0.811, while the number of features has decreased from 4657 to 161. Of course, as it is clear from the results in the tables and figures, this improvement can be seen in other classifications as well, which shows the efficiency of using the proposed method.

Table 2: The Accuracy of Different Classifications For "DVD".

Technique	Without using data reduction		FS		FU-	
	ACCURACY	#Fe	accuracy	#Fe	accuracy	#Fe
SVM	0.767	4657	0.780	500	0.811	161
K-NN	0.640	4657	0.677	500	0.71	164

Chart 1: The Accuracy of Different Classifications for The Data of "DVD"

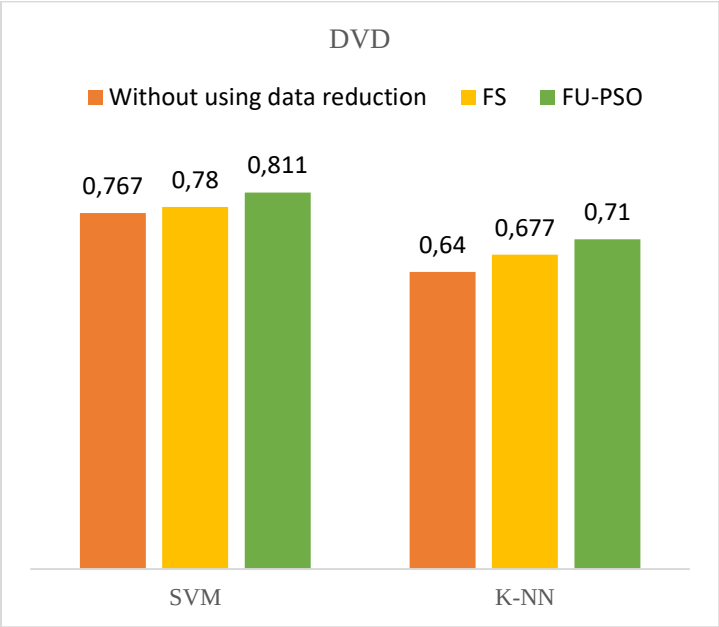


Table 3: The Accuracy of Different Classifications for the Data" BOOK"

Technique	**Without using data reduction**		**FS**		**FU-PSO**	
	Accuracy	#Fe	Accuracy	#Fe	Accuracy	#Fe
SVM	0.762	8457	0.780	500	0.821	200
K-NN	0.647	4657	0.677	3000	0.712	955

Chart 2: The Accuracy of Different Classifications for the Data of Book

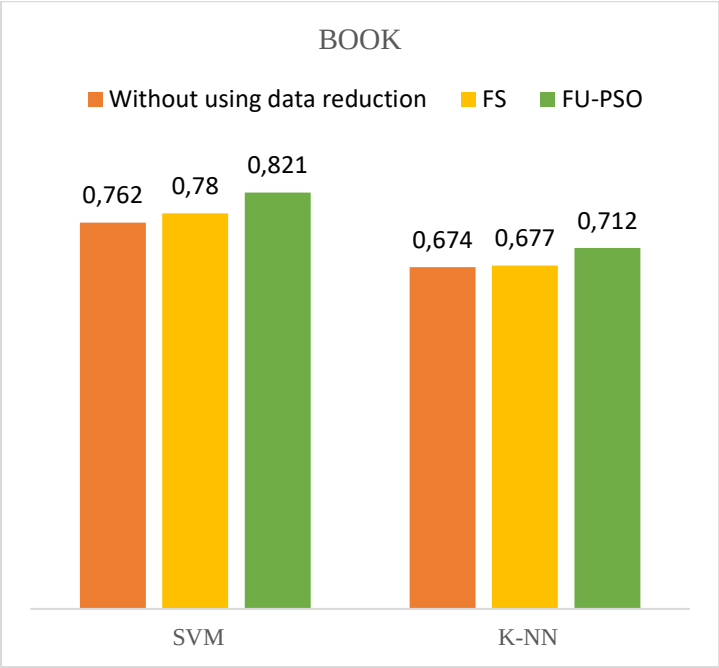


Table 4: The Accuracy of Different Classifications for the Data" Electronic"

Technique	Without using data reduction		FS		FU-PSO	
	Accuracy	#Fe	Accuracy	#Fe	Accuracy	#Fe
SVM	0.722	4216	0.785	1500	0.803	500
K-NN	0.725	4216	0.723	1000	0.753	330

Chart 3: The Accuracy of Different Classifications for the Data of Electronic

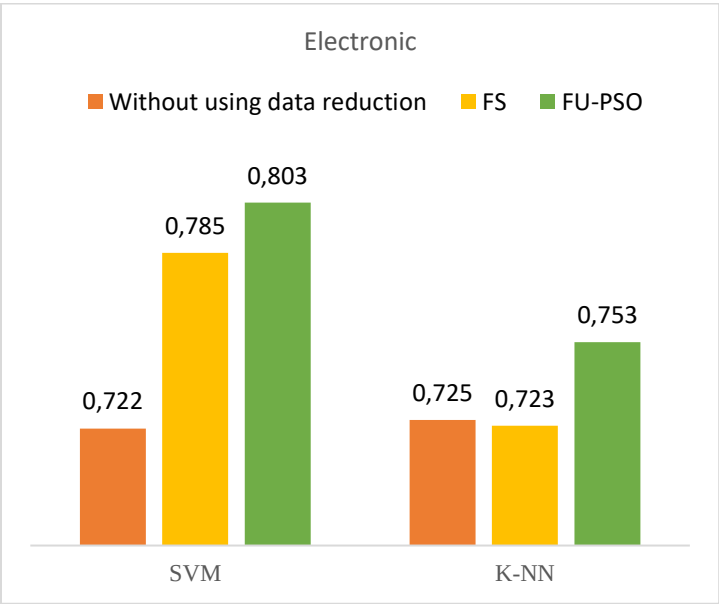


Table 5: The Accuracy of Different Classifications for the Data of KITCHEN

Technique	Without using data reduction		FS		FU-PSO	
	Accuracy	#Fe	Accuracy	#Fe	Accuracy	#Fe
SVM	0.820	3738	0.822	500	0.843	200
K-NN	0.720	3738	0.722	2000	0.747	750

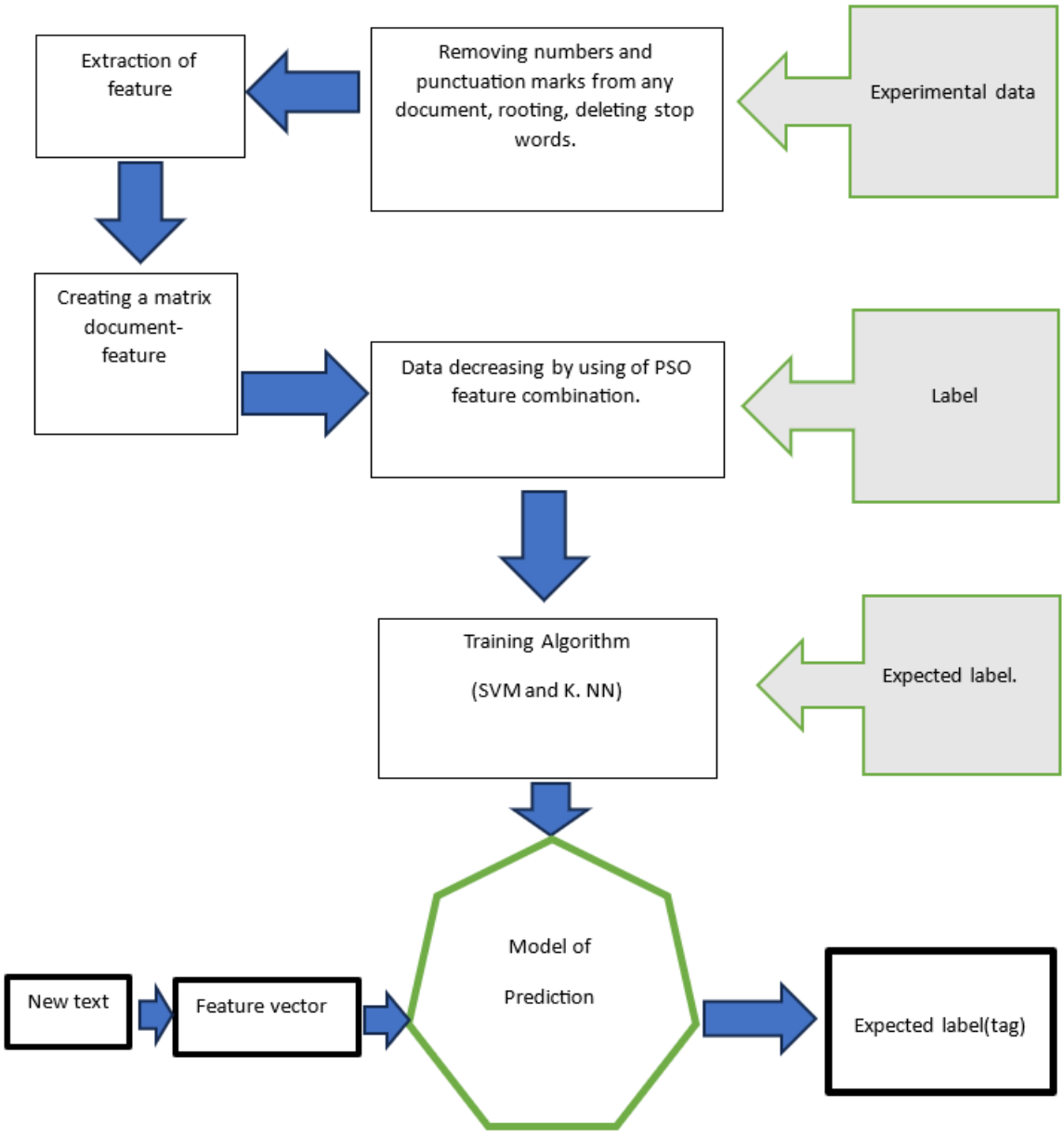
Chart 4: The Accuracy of Different Classifications for the Data of Kitchen

Classification of all datasets using the SVM algorithm has the highest accuracy. These results show that SVM has more classification power, which is consistent with previous research. The results of the experiments indicate the improvement of the classification performance by using the feature combination based on the particle optimization method in the field of data mining. It can also be said that the use of this method has a significant effect on increasing classification efficiency due to data reduction at the feature level. It can also be said that the effect of combining features with the K-NN algorithm is successful, which is due to the sensitivity of this algorithm to inappropriate data.

5. CONCLUSION AND RECOMMENDATIONS

The current research was conducted to provide a data mining-based method for information classification for knowledge extraction using the K-NN classification method and SVM neural network. The nearest neighbor algorithm has the task of finding the best and fastest answer from all the data, and the neural network is the supporting vector machine of pseudo-artificial intelligence. The example used in the SVM algorithm is presented with a linear structure and has a lot of similarities with the multilayer perceptron neural network or MLP. It can be said that these two models, despite their differences, have similar structures. How the MLP neural network works. It is such that it adjusts the error minimization parameters, but the SVM algorithm defines the risk caused by the lack of correct classification as an objective function, and the parameters will be adjusted and optimized according to the objective function.

Figure 4: Proposed a Text Mining-Based Conceptual Model



It this study, text-mining techniques were used, but advancements in data mining, natural language processing, and machine learning always is progressing. being updated with the latest methodologies and tools is important for improving the effectiveness of information classification and knowledge extraction.

The study mentions the use of particle optimization methods for data mining. Exploring and experimenting with various optimization techniques can further enhance classification performance and reduce computational costs.

Encourage collaboration between experts in industrial engineering, data science, and machine learning as Interdisciplinary teams can bring diverse perspectives and skills to improve the model and its applications. Additionally, collaboration and interdisciplinary approaches can lead to more robust and effective information classification and knowledge extraction systems.

The experimental results of this research were analyzed using two classification techniques (SVM and KNN) and data reduction (feature selection). From these results, it can be concluded that using the feature combination method increases the efficiency of classification and reduces the effect of this increase in reducing the efficiency of the classifier. The point that

should be considered in the following works is that the more the connection between the words selected to combine the features, the higher the accuracy of the system. Using a combination tactic with a hierarchical structure according to this structure can help with this goal.

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EXPLORING THE IMPACT OF SOCIAL MEDIA CRISIS MANAGEMENT ON CUSTOMER TRUST AND CORPORATE REPUTATION: THE CASE OF STARBUCKS TURKIYE

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ABSTRACT

Purpose- This study examines the impact of social media crisis management on corporate reputation, customer trust, and communication quality, focusing specifically on Starbucks Türkiye's responses to crises. The study aims to differentiate between proactive and reactive crisis management strategies and assess their effects on consumer perceptions during crises like the February 6 earthquake and the ongoing Palestine war.

Methodology- The research utilizes a sample of 348 participants who engaged in boycotting Starbucks Türkiye due to its crisis responses. Data collection was conducted via online surveys, with participants selected based on prior Starbucks consumption and boycott involvement. Data analysis employed SPSS 25 and SmartPLS 4 to evaluate the impact of proactive and reactive crisis management on customer trust, corporate reputation, and communication quality.

Findings- The findings indicate that proactive crisis management strategies, characterized by transparency, empathy, and prompt responses, positively impact corporate reputation and sustain customer trust. Conversely, reactive crisis management—often marked by delays and inconsistent messages—negatively affects trust and communication quality. Additionally, the study underscores that effective communication quality, especially during crises, significantly strengthens customer trust, fostering loyalty and enhancing long-term relationships, although it has a limited direct impact on corporate reputation.

Conclusion- The study concludes that proactive crisis management is essential for companies facing public scrutiny, particularly on social media. Starbucks Türkiye's experience highlights the critical role of transparent, empathetic, and timely communication in managing reputational risks and maintaining customer trust. Organizations are encouraged to prioritize proactive crisis strategies that include clear, consistent messaging and active engagement with stakeholders to mitigate negative perceptions. Reactive approaches, while sometimes necessary, should focus on quick, authentic responses to minimize potential damage. The study suggests further research to explore additional factors that may mediate the link between communication quality and corporate reputation, especially in high-stakes digital environments.

Keywords: Social media crisis management, proactive social media crisis management, reactive social media crisis management, customer trust, corporate reputation
JEL Codes: M10, M30, M31

1. INTRODUCTION

Effective crisis management is vital for an organization's resilience and long-term success, emphasizing the importance of proactive planning, efficient response tactics, and thorough post-crisis evaluations (Ciekanowski, 2023; Bryson & Atwal, 2019). Key elements of successful crisis management include the management of information, strategic communication, and the integration of crisis protocols within the broader management framework (Sun, 2023). Organizations that are well-prepared for crises are better positioned to overcome them, highlighting the importance of regular reviews of crisis plans and comprehensive staff training. Strategic planning is crucial, necessitating a balanced integration of strategic foresight and crisis management to effectively address potential challenges (Weigand et al., 2014). By continuously monitoring the market environment and developing proactive crisis management strategies, organizations can strengthen their resilience, enhance stakeholder confidence, and improve overall performance.

Social media represents a broad category utilized to denote a new phase of Internet-based platforms centered on content generated or manipulated by users. Examples of such platforms include wikis, blogs, podcasts, and social networking sites (Instagram, Twitter, LinkedIn etc.) (Kaplan and Haenlein, 2010; Kietzmann et al., 2011). Social media has become a mundane

communication medium in daily life, whether for customers or corporations, and thus plays a crucial role in corporate communication strategies (Urse and Tasente, 2022). During crises, individuals tend to perceive social media reporting as more trustworthy compared to traditional mass media crisis reporting (Riddel, 2024). The credibility of social media sources greatly impacts users' attitudes, the quality of information, public engagement, and the believability of information during emergencies. These platforms are essential for spreading real-time information, connecting people, issuing alerts, and coordinating volunteer efforts during disasters, which in turn increases trust in the shared information. Additionally, perceived trust in social media positively affects users' intention to seek and share information, ultimately influencing their acceptance and usage of mobile social media (Wang and Xiong, 2022). This highlights the shift towards social media as a trusted source of crisis communication, emphasizing the importance of credibility and reliability in maintaining public trust and engagement during emergencies.

Corporate reputation is crucial for shaping stakeholder perceptions, nurturing customer loyalty, and achieving overall business success in today's competitive and transparent business environment. Scholars emphasize that a positive reputation is a valuable intangible asset that can provide enduring competitive advantages (Ang and Wight, 2009). Effectively managing corporate reputation involves understanding factors such as communication strategies and engaging with stakeholders (Doorley and Garcia, 2015; Gray and Balmer, 1998). Maintaining a positive reputation is vital for sustained success, enabling organizations to differentiate themselves from competitors, build credibility, and foster trust among stakeholders (Dowling, 2004). Corporate branding practices, focusing on brand identity, values, and positioning, are instrumental in cultivating a strong reputation that secures a lasting competitive advantage (Abratt and Mingion, 2022).

Trust is essential for building and maintaining relationships with customers, as it acts as a foundation for loyalty and satisfaction (Wah Yap et al., 2012). Customer trust is the belief held by consumers that service providers will consistently and dependably deliver on their commitments (Sirdeshmukh et al., 2002). High-quality service provided by businesses positively impacts customer trust, satisfaction, and loyalty, underscoring the necessity of maintaining high service quality standards to boost customer trust (Venkatakrishnan et al., 2023; Anderson and Swaminathan, 2011). Consequently, cultivating and sustaining customer trust is crucial for businesses to achieve customer satisfaction, loyalty, and long-term success. Despite its importance, establishing and maintaining customer trust faces numerous challenges. The rise of digital transactions has increased the complexity of trust management, as clients often interact with organizations without face-to-face contact (Ba and Pavlou, 2002). Additionally, data breaches and privacy concerns have heightened customer awareness of trust-related issues (Belanger et al., 2002). Restoring trust after it has been damaged is particularly difficult. Kim et al., (2009) noted that rebuilding trust requires significant commitment and transparency, yet some customers may never fully regain their trust in the organization (p. 401). To mitigate these risks, it is crucial to adopt proactive strategies for building trust, such as promoting transparent communication and demonstrating consistent ethical behavior.

Starbucks Türkiye has been chosen as a case study due to its relevance to both proactive and reactive social media crisis management. This research investigates how these crisis management strategies affect corporate reputation, customer trust, and communication quality management. The results emphasize the significance of proactive strategies in enhancing corporate reputation by promoting transparency and responsiveness, which are crucial for building trust and effectively managing public perception. In contrast, reactive crisis management tends to erode trust due to delayed responses and inconsistent messaging. Additionally, the study highlights the critical role of effective communication in sustaining customer trust, which in turn affects corporate reputation. However, it also notes that communication quality alone may not substantially influence reputation due to the complex nature of reputational constructs.

This paper is structured as follows: The literature review section examines crisis communication quality, social media crisis management, corporate reputation, and customer trust. The methodology section provides a detailed description of the sample and data collection process, followed by an analysis of the data. Finally, the discussion section interprets the findings in the context of the existing literature and outlines their implications.

2. LITERATURE REVIEW

2.1. Crisis Communication Quality and Social Media Crisis Management

Crisis management theory underscores the significance of readiness, prompt reaction, and drawing lessons from previous crises. Pearson and Clair (1998) posit that a crisis can be defined as "an event of high impact but low probability that jeopardizes the sustainability of the organization, marked by uncertainty regarding its origins, consequences, and methods of addressing it" (p. 60). This description highlights the erratic and unsettling characteristics of crises. The situational crisis communication theory (SCCT) developed by Coombs (2007) provides a framework for understanding how organizations should communicate during crises. SCCT suggests that the effectiveness of crisis communication strategies depends on the crisis type and the organization's crisis history. The theory posits that a well-crafted response can mitigate reputational damage and restore stakeholder trust.

Several factors contribute to the quality of crisis management. Key determinants include crisis preparedness, leadership, communication, and organizational learning. Effective crisis management begins with thorough preparation. According to Mitroff et al., (1987), crisis preparedness involves developing comprehensive crisis management plans, conducting regular risk assessments, and training employees. "Organizations that invest in crisis preparedness are better equipped to respond swiftly and effectively when a crisis occurs" (Mitroff, 2001, p. 27). Effective crisis leadership is crucial for guiding organizations through periods of uncertainty and ensuring stakeholder well-being (Newstead and Riggio, 2024). The personality traits of leaders, such as self-confidence and openness to new information, significantly influence the timeliness of crisis management actions (Oktay, 2024). The need for flexible leadership frameworks that can adapt to evolving circumstances highlights the balance between centralization and decentralization in crisis leadership (Kalkman, 2023). During crises like the COVID-19 pandemic, leaders play a vital role in maintaining stability and instilling confidence within their teams (Nizamidou, 2023). Additionally, leadership acts as a moderating factor in the effectiveness of human resource development strategies, such as leveraging internal corporate social networks, on organizational resilience and knowledge sharing during and after crises (Zhou, 2022). Competent crisis leaders must demonstrate decisiveness, empathy, and effective communication under pressure to provide stability and build trust among their teams and stakeholders. Learning from past crises is essential for continuous improvement. According to Elliott et al., (2000), organizations that analyze their crisis responses and implement lessons learned are more resilient to future crises. "Organizational learning ensures that mistakes are not repeated and that crisis management processes are continuously refined" (Elliott et al., 2000, p. 15). Studies (e.g., Gasana, 2024; McCharty, 2024; Kim, 2018; Haavisto and Linge, 2022) show that clear, consistent, and transparent communication is vital for managing a crisis. Coombs (2007) emphasizes that timely and accurate information helps manage stakeholder expectations and reduce misinformation. "Effective communication strategies can significantly mitigate the negative impact of a crisis on an organization's reputation" (Coombs, 2007, p. 164). Crisis communication strategies are essential in addressing unforeseen events like cybercrimes, natural disasters, and academic scandals, which can profoundly affect higher education institutions and organizations globally. By adhering to crisis communication principles, organizations can manage crises more effectively, reduce communication gaps, and foster trust with stakeholders and the public. Transparency, authenticity, and responsiveness are crucial elements of crisis communication, particularly in countering the challenges of fake news and maintaining organizational credibility in the digital age.

High-quality crisis management can have a profound impact on an organization's performance and stakeholder relationships. Managing crises effectively can mitigate financial losses and ensure business continuity. Quality crisis management fosters trust among stakeholders by demonstrating the organization's commitment to transparency and accountability. According to Gillespie and Dietz (2009), stakeholders are more likely to maintain their trust in an organization that responds effectively to a crisis. "Trust is a critical asset that can be preserved through competent crisis management" (Gillespie & Dietz, 2009, p. 131). Effective crisis management can protect and even enhance an organization's reputation. Kim et al., (2009) found that prompt and sincere responses to crises positively influence public perceptions. "Organizations that handle crises well are often perceived as more trustworthy and reliable" (p.175).

Despite its importance, achieving quality crisis management presents several challenges. The unpredictable nature of crises makes it difficult to plan for every possible scenario (Shrivastava, 1993). Additionally, the rapid dissemination of information through social media can complicate crisis communication efforts, as organizations must manage both the crisis and the flow of information simultaneously (Aula, 2010). Maintaining stakeholder trust during a crisis is also challenging, particularly when the crisis involves ethical breaches or significant operational failures (Paine, 2003). Rebuilding trust after a crisis requires sustained effort and commitment to transparency and accountability. In the context of social media, high-quality crisis management becomes even more crucial due to the rapid spread of information and the heightened visibility of organizational actions. Social media platforms can amplify both the positive and negative impacts of a crisis, making it essential for organizations to respond swiftly and effectively. Companies with strong social media crisis management strategies can reduce the volatility of public perception and maintain stakeholder trust. Minimizing disruption and maintaining investor confidence are vital (Knigt and Pretty, 1997), and this can be achieved by addressing crises transparently and promptly on social media.

Social media crisis management can be categorized into two approaches: proactive and reactive. Proactive crisis management entails implementing strategies before a crisis arises, such as monitoring social media for early warning signs and establishing communication protocols (Banyongen, 2023). In contrast, reactive crisis management involves responding to a crisis in real-time, using social media to share information, address concerns, and manage the situation as it develops (Babatunde, 2022). Effective crisis communication via social media is vital for preserving an organization's reputation and managing public perception during and after a crisis (Işık and Tatlı, 2024). Moreover, incorporating content and initiatives generated by citizens into crisis response efforts offers both advantages and challenges, highlighting the need for mutual trust between institutions and the public in crisis management (Rizza, 2023). Recognizing the role of social media in crisis communication is crucial for organizations to successfully navigate crises and safeguard their reputation and stakeholder relationships (Marsen, 2020).

2.1.1. Proactive Social Media Crisis Management

Social media has revolutionized communication, offering organizations a platform to engage directly with stakeholders. However, this immediacy also poses risks, as crises can unfold rapidly and publicly. Proactive social media crisis management (PSMCM) has thus become essential for organizations to mitigate potential damage and maintain their reputation. The significance of PSMCM cannot be overstated in today's digital landscape. Social media crises can arise from various sources, including customer complaints, misinformation, or employee misconduct. According to Coombs (2007), "the speed and reach of social media can amplify crises, making swift and effective crisis management essential" (p. 35). Moreover, the transparency and public nature of social media demand that organizations respond promptly and authentically to maintain stakeholder trust (Veil et al., 2011). Effective PSMCM involves several strategies, which can be broadly categorized into preparation, monitoring, and response.

Preparation is the foundation of PSMCM. Organizations should develop a comprehensive crisis management plan that includes social media guidelines and protocols. This plan should be regularly updated and include predefined responses for various crisis scenarios (Macnamara and Zerfass, 2012). Additionally, organizations should train their social media teams to handle crises effectively, ensuring they are familiar with the organization's values and communication style.

Continuous monitoring of social media channels is crucial for early detection of potential crises. Advanced monitoring tools can help organizations track mentions, keywords, and sentiment across various platforms (Pfeffer et al., 2014). By identifying emerging issues early, organizations can address them before they escalate into full-blown crises. As Jin et al., (2014) note, "real-time monitoring allows for immediate response, which is critical in preventing the spread of misinformation and controlling the narrative" (p. 73).

The response phase is critical in PSMCM. Organizations should aim to respond quickly, transparently, and consistently. According to Schultz et al., (2011), "a timely and transparent response can significantly reduce the negative impact of a social media crisis" (p. 22). It is important to acknowledge the issue, apologize if necessary, and provide accurate information to address the concerns of stakeholders. Additionally, engaging with stakeholders directly and personally can help rebuild trust and demonstrate the organization's commitment to resolving the issue. To ensure effective PSMCM, organizations should adhere to several best practices: maintaining a consistent tone and message, engaging with stakeholders, utilizing multimedia, and evaluating and learning from past crisis.

Maintaining a consistent tone and message is significant because consistency in communication helps build trust and credibility. Organizations should ensure that all responses align with their core values and messaging (Coombs, 2007). Whereas direct engagement with stakeholders shows that the organization values their concerns and is committed to resolving the issue. This can be done through public posts as well as private messages (Veil, et al., 2011). Incorporating multimedia elements such as videos, infographics, and images can enhance the effectiveness of crisis communication. These elements can help convey complex information more clearly and engage a wider audience (Pfeffer et al., 2014). Lastly, organizations should conduct post-crisis evaluations to identify strengths and weaknesses in their response. This analysis can inform future crisis management strategies and improve overall preparedness (Macnamara and Zerfass, 2012).

Proactive social media crisis management is a critical component of modern organizational strategy. Adhering to best practices and learning from past experiences can further enhance the effectiveness of PSMCM. As the digital landscape continues to evolve, the importance of proactive crisis management will only grow, making it an essential skill for organizations in all sectors. By preparing thoroughly, monitoring continuously, and responding effectively, organizations can mitigate the impact of social media crises and maintain their reputation. Thus, customer trust increases when the quality of crisis communication is positively affected. Therefore, we hypothesize:

H1: Proactive social media crisis management strategies positively impact crisis communication quality.

2.1.2. Reactive Social Media Crisis Management

In the realm of social media, crises can erupt with little warning, necessitating a swift and strategic response from organizations. Reactive social media crisis management (RSMCM) focuses on addressing crises after they have occurred, aiming to mitigate damage, restore trust, and learn from the experience.

RSMCM is crucial for maintaining an organization's reputation and stakeholder trust during and after a crisis. Social media's rapid dissemination of information can amplify crises, making timely and effective responses essential. Coombs (2007) emphasizes that "reactive crisis management is about damage control and managing the crisis fallout to prevent long-term reputational harm" (p. 56). Effective RSMCM can turn potential public relations disasters into opportunities for demonstrating accountability and responsiveness (Jin et al., 2014).

Effective RSMCM involves several strategies, which can be categorized into immediate response, engagement, and recovery. The immediate response is critical in RSMCM. Organizations must act swiftly to address the crisis, acknowledging the issue and providing initial information to stakeholders. According to Schultz et al., (2011), "a prompt acknowledgment of the crisis can prevent misinformation from spreading and demonstrates the organization's commitment to transparency" (p. 24). The initial response should be clear, concise, and factual, avoiding speculation or defensiveness. Engaging with stakeholders during a crisis is essential to manage perceptions and maintain trust. Organizations should actively communicate with their audience, providing regular updates and addressing concerns directly (Veil et al., 2011). Personalized responses can be particularly effective in demonstrating empathy and understanding. As Pfeffer et al., (2014) note, "personalized engagement can humanize the organization and foster a sense of connection with stakeholders" (p. 120).The recovery phase involves ongoing communication and actions to rebuild trust and repair any damage caused by the crisis. Organizations should continue to provide updates on the resolution of the crisis and any measures taken to prevent future occurrences. Jin et al., (2014) suggest that "a transparent and proactive approach during the recovery phase can enhance the organization's credibility and restore stakeholder confidence" (p. 79). Additionally, organizations should conduct a thorough post-crisis evaluation to identify lessons learned and improve future crisis management strategies (Macnamara and Zerfass, 2012).

To ensure effective RSMCM, organizations should adhere to several best practices: establish a crisis response team, use consistent messaging, monitor stakeholder feedback, be transparent and honest, and follow up after the crisis. Establishing a crisis response team refers to forming a dedicated team that ensures a coordinated and efficient response. This team should include members from communication, legal, and operational departments (Coombs, 2007). Consistency in messaging across all platforms helps maintain clarity and credibility. Organizations should ensure that all communications align with their core values and crisis management plan (Veil et al., 2011). Monitoring social media channels for stakeholder feedback during a crisis allows organizations to address concerns promptly and adjust their response strategies as needed (Pfeffer et al., 2014). Transparency and honesty are critical in maintaining trust during a crisis. Organizations should provide accurate information and avoid misleading or minimizing the issue (Schultz et al., 2011). Finally, following up with stakeholders after the crisis demonstrates a commitment to resolution and continuous improvement. This can include providing updates on corrective actions and inviting feedback from stakeholders (Jin et al., 2014).

Reactive social media crisis management is a vital component of organizational resilience. By responding swiftly, engaging effectively, and maintaining transparency, organizations can mitigate the impact of social media crises and rebuild stakeholder trust. Adhering to best practices and learning from each crisis can enhance the effectiveness of RSMCM and prepare organizations for future challenges. In an era where social media can both create and resolve crises, mastering reactive crisis management is essential for sustaining organizational reputation and credibility. However, organizations may delay taking action or prefer to remain reactive. In this sense, reactive social media crisis management could potentially harm the quality of crisis communication and erode customer trust. Based on this observation, we posit that:

H2: Reactive social media crisis management strategies negatively impact crisis communication quality.

2.2. Corporate Reputation and Customer Trust

Corporate reputation is a multifaceted construct that has been defined and examined from various academic perspectives. According to Fombrun and Van Riel (2004), corporate reputation is "a collective representation of a company's past actions and results that describes the firm's ability to deliver valued outcomes to multiple stakeholders" (p. 10). This definition underscores the cumulative nature of reputation, shaped by historical performance and stakeholder experiences. The resource-based view (RBV) of the firm posits that corporate reputation is a valuable, rare, inimitable, and non-substitutable (VRIN) resource that can provide a sustainable competitive advantage (Barney, 1991). From this perspective, reputation is seen as an intangible asset that enhances a firm's ability to attract customers, employees, and investors, thus driving long-term success.

As an intangible resource (Goldberg et al., 2003) corporate reputation is an important asset for the firms (Mahon, 2002). A strong corporate reputation can attract and retain talented employees, enhance customer loyalty, boost sales, secure funding, and improve overall organizational performance (Razak et al., 2023; Kibu et al., 2023). Corporate reputation is seen as a perception of a company's past actions and future potential, which impacts its attractiveness to key stakeholders compared to competitors (Arzberger, 2022). Research indicates that a strong corporate reputation is crucial for gaining a competitive edge, as it moderates the relationship between corporate social responsibility and organizational performance through trust and reputation, particularly in developing markets (Salam and Jahed, 2023). Effective communication strategies, particularly those employed by public relations professionals, are essential for firms to build and maintain positive relationships with stakeholders, which significantly contributes to a favorable corporate reputation. These strategies help in managing the flow of information between the organization and its stakeholders, ensuring that the firm's messages are clear, consistent, and aligned with its values and objectives. Through strategic communication, PR professionals can enhance trust, loyalty, and satisfaction among stakeholders, ultimately strengthening the firm's reputation and competitive position in the

market (Lee, 2022; Desai, 2018). In today's digital era, the implementation of effective social media communication strategies is crucial due to its significant impact on audience engagement, public perception, and corporate reputation, which in turn influences tangible actions and decisions (Shvelidze et al., 2024). Research highlights that specific communication methods can enhance public satisfaction, create a positive brand image, and foster loyalty towards public services (Hsieh, And Li, 2008).

A positive corporate reputation yields numerous benefits, impacting various aspects of organizational performance. It increases investor confidence, employee attraction and retention, as well as the customer loyalty and trust. Investors consider companies with strong reputations as lower-risk and more likely to provide consistent returns, influencing their investment decisions (Fombrun & Shanley, 1990). A positive reputation can lead to higher stock prices and a lower cost of capital. On the other hand, corporate reputation significantly influences a company's ability to attract and retain top talent. A positive reputation enhances employer attractiveness, making it easier to recruit skilled employees (Turban & Cable, 2003). Additionally, employees of reputable companies tend to exhibit higher job satisfaction and organizational commitment (Dutton et al., 1994). Lastly, a strong reputation fosters customer loyalty and trust, which in turn leads to increased customer retention and brand advocacy. According to Reichheld and Schefter (2000), “loyal customers are less sensitive to price changes and more likely to recommend the company to others, thereby driving long-term profitability” (p. 107).

Despite its importance, managing corporate reputation presents several challenges. The advent of social media has amplified the speed and reach of information dissemination, making reputation management more complex (Aula, 2010). Companies must navigate the delicate balance between transparency and strategic disclosure while addressing the diverse expectations of multiple stakeholders (Barnett et al., 2006). Effective communication is essential for managing corporate reputation. Transparent and consistent communication helps build trust and credibility with stakeholders (Alsop, 2004). "Companies that communicate openly and honestly with their stakeholders are more likely to maintain a positive reputation, even in times of crisis" (Coombs, 2007, p. 163). Moreover, reputational damage can be difficult to repair. As Chun et al., (2005) note, "rebuilding a damaged reputation requires substantial time and resources, and the effects of reputational crises can linger long after the initial incident" (p. 247). Proactive reputation management, including continuous monitoring and engagement with stakeholders, is essential to mitigate these risks. Conversely, reactive management could potentially harm reputation. So, we posit:

H3: Proactive social media crisis management strategies directly affect corporate reputation positively.

H4: Reactive social media crisis management strategies have a direct negative impact on corporate reputation.

H5: Crisis communication quality affects corporate reputation.

Customer trust can be conceptualized as the belief held by consumers that a company will fulfill its promises and act in their best interest. According to Morgan and Hunt (1994), trust is defined as “when one party has confidence in an exchange partner’s reliability and integrity” (p. 23). This definition highlights the key components of trust: reliability and integrity. The theory of planned behavior (TPB) posits that trust plays a crucial role in shaping consumer intentions and behaviors (Ajzen, 1991). Trust reduces the perceived risk associated with purchasing decisions, thereby facilitating positive consumer actions. In the context of online transactions, Gefen et al., (2003) emphasized that trust mitigates the uncertainty and perceived risk, which are particularly high in electronic commerce.

Several factors contribute to the development and maintenance of customer trust. Key determinants include perceived competence, benevolence, integrity, and transparency. Competence refers to the belief that a company has the ability to deliver on its promises. Competence is one of the critical dimensions of trustworthiness (Kharouf et al., 2014; Mayer et al., 1995). Customers are more likely to trust companies they perceive as capable and knowledgeable in their field. Benevolence is the perception that a company genuinely cares about the well-being of its customers. Benevolence involves putting the customer's interests first (Sirdeshmukh et al., 2002; Doney and Cannon, 1997). Companies that demonstrate empathy and understanding can foster higher levels of trust. Integrity involves adhering to a set of principles and ensuring consistency between words and actions. McKnigh et al., (2002) noted that perceived integrity is crucial for building trust, as it signals that a company is honest and ethical. Transparency in communication and business practices enhances trust by reducing information asymmetry. According to Rawlins (2008), transparency involves openness, clarity, and a willingness to share information. In this sense, companies that are transparent about their processes, policies, and potential issues are more likely to be trusted by customers.

A high level of customer trust yields numerous benefits, significantly impacting various aspects of organizational performance such as increased customer loyalty, positive word of mouth and enhanced customer satisfaction. Trust is a crucial determinant of customer loyalty. Chaudhuri and Holbrook (2001) found that trust positively influences both attitudinal and behavioral loyalty. Trustworthy companies enjoy repeat business and strong customer advocacy, leading to sustained revenue growth. Customers who trust a company are more likely to engage in positive word-of-mouth communication. Verhoef et al. (2002) showed that trust encourages customers to recommend a company to others, expanding the customer

base and enhancing the company's reputation. On the other hand, negative experiences with a company can lead to negative word-of-mouth (Başaran and Ventura, 2021; Williams et al., 2012), damaging the company's reputation and eroding customer trust. Trust also contributes to overall customer satisfaction by making customers feel safe and valued. Sirdeshmukh et al. (2002) noted that trust reduces perceived risk and improves the overall consumption experience, leading to higher satisfaction levels. So, communication quality plays a vital role in increasing customer trust. From the perspective of social media crisis management, proactive strategies are crucial for enhancing customer trust (Jin et al., 2014; Gkouna et al., 2023). By effectively utilizing social media platforms during crises, organizations can address stakeholder concerns, minimize negative impacts, and uphold trust through timely and transparent communication. Conversely, reactive social media crisis management strategies can lead to a decline in customer trust (Rim and Ferguson, 2020). On the other hand, various research studies (e.g., Kerse, 2023; Keh and Xie, 2009; Song et al., 2019) indicate that there is a relationship between customer trust and corporate reputation. So, we hypothesize:

H6: Crisis communication quality affects customer trust.

H7: Proactive social media crisis management strategies increase customer trust.

H8: Reactive social media crisis management strategies reduce customer trust.

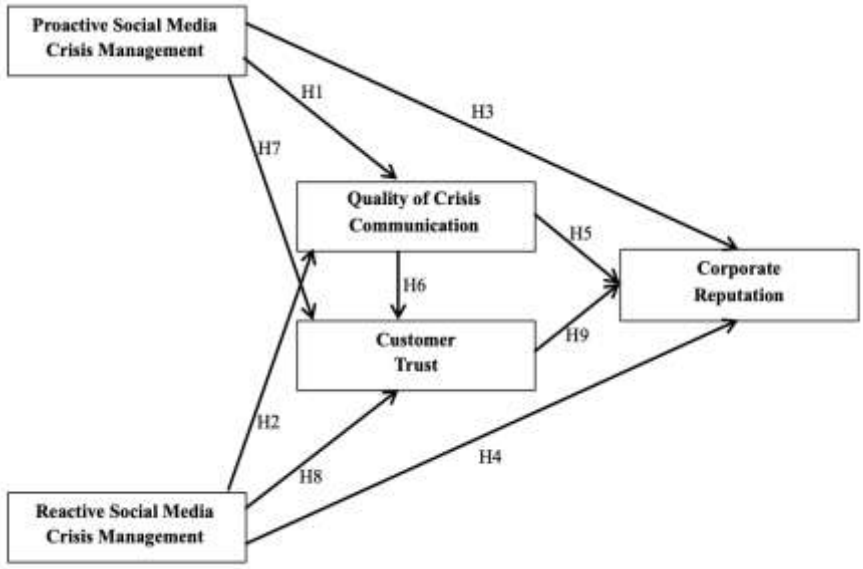
H9: Customer trust affects corporate reputation.

3. METHODOLOGY AND FINDINGS

This study explores how the quality of crisis management and social media strategies influence customer trust and corporate reputation. Starbucks Türkiye is selected as a case study due to its relevance to both proactive and reactive social media crisis management. This approach is particularly fitting for examining these dynamics. Aforementioned before, proactive social media crisis management refers to the strategies and actions taken by an organization before a crisis occurs, aimed at preventing or minimizing the impact of potential crises on their reputation and stakeholders (Macnamara and Zerfass, 2012). Conversely, reactive social media crisis management involves strategies and actions taken by an organization in response to a crisis that has already occurred and is actively affecting the organization's reputation or stakeholders. It focuses on mitigating damage and restoring trust after the crisis has occurred (Coombs, 2007). Starbucks Türkiye has encountered both proactive and reactive social media crisis management strategies between 2022 and 2024. On February 6, 2023, Türkiye experienced devastating earthquakes centered in Kahramanmaraş, affecting 11 cities and causing widespread destruction. This event prompted a significant international cooperation effort to aid earthquake survivors, extending support not only within Türkiye but also globally. Many firms provided financial aid as well as products or services related to their respective industries. However, at the beginning of the relief efforts, Starbucks Türkiye faced boycotts because they did not announce any support activities. Despite the boycott they kept their silence for 3 days. Then, #starbucksboykot (#starbucksboycott in English) became the trending topic in Türkiye on X. Hence, the silence of the Starbucks Türkiye turned into a crisis for the organization. As public pressure grew, Starbucks Türkiye were forced to break its silence three days after the earthquake (Akçay, 2023, p. 264). Starbucks Türkiye had posted a tweet on X that states their condolences.

However, this message was late, and it didn't contain any information about support either financial or product or services. This condolence message was not enough for the customers and boycott campaign continued. A day later, on February 10, 2023, Starbucks Türkiye posted new explanation titled "of course we were there, we are there, and we will continue to be there" (Starbucks Türkiye, 2023) on X. Finally, four days after the earthquake, Starbucks Türkiye explained their support for the survivors, which serves as an example of reactive social media crisis management. Nowadays, Starbucks is facing another boycott due to the Palestine War. This time, it is not only a local boycott but also a global one. Nonetheless, this study aims to investigate Starbucks Türkiye. The claims were that Starbucks financially supports Israel to help them get armed. Starbucks Türkiye has learned its lesson this time and did not remain silent. They shared their position on Israel and the war, as well as their company mission and other relevant information, when the call for the boycott campaign started. Because the claims were that Starbucks financially support Israel to get them armed (Simon, 2011). Starbucks categorized their explanation under 6 main categories under the title of "Starbucks for the Record". These categories include: What has Starbucks said about the conflict in Israel and Gaza? Does Starbucks have a presence in the Middle East Is Starbucks a political organization? What has Starbucks said about misinformation on social media? Why did Starbucks file litigation against Workers United?, and What is happening with Starbucks and labor unions? (Starbucks, 2024). This serves as an example of proactive social media crisis management. Therefore, as noted, Starbucks Türkiye is the ideal case for investigating social media crisis management in terms of both proactive and reactive strategies. A model is developed to investigate the effect of social media crisis management on customer trust and corporate reputation as depicted in Figure 1.

Figure 1: **Analytical Model: The Relationship Between Social Media Crisis Management and Corporate Reputation**



3.1. Sample and Data Collection

A population consists of all elements sharing at least one common characteristic, forming the entire universe under study (Malhotra, 2016). In this context, the population for this research includes all individuals who have previously consumed Starbucks and are participating in the boycott for the given reasons. The first question of the survey is "I have consumed Starbucks at least once" and the second one is "I boycotted Starbucks because of the February 6 earthquake or the war in Palestine". The survey was terminated for those who answered 'no' to any of these questions. In addition, a sample refers to a subgroup of the population selected to participate in the study. To ensure the quality of the results, the sample size should be sufficiently large (n > 30) to allow for statistical inferences (Pina and Dias, 2021). An online survey is prepared by the researchers to collect data, and it was shared through social media platforms and e-mail. Statements were developed by the researchers based on the literature and Starbucks Türkiye's social media post during the crisis, all employing a 5-point Likert scale from strongly agree (5) to strongly disagree (1). The study was conducted in İzmir, Türkiye between July and August of 2024. After pre-testing with 35 participants to enhance clarity and validity, data was collected from 348 individuals, with demographic details provided in Table 1.

Table 1: Demographic Profile of the Participants

Age	Mean=33.56, Standard Deviation=10.4562		
		Frequency	**Percentage**
Gender	Male	166	47.7%
	Female	182	52.3%
Marital Status	Single	187	46.3%
	Married	161	53.7%
Education Level	Elementary school	9	2.6%
	Intermediate school	54	15.5%
	High school	154	44.3%
	Graduate degree	131	37.6%
Income Status	Low	117	33.7%
	Middle	147	42.2%

	High	84	24.1%
Employment	Employed in public sector	47	13.5%
	Employed in private sector	99	28.4%
	Self-employed	89	25.6%
	Unemployed	17	4.9%
	Student	96	27.6%
Total		**348**	**100%**

Approximately 52% of the participants were female, and 48% were male. Participants ranged in age from 19 to 69 years, with a mean age of 33.55 years. About 38% of the participants held a graduate degree, 44% held a high school diploma, 15% held an intermediate school diploma, and 3% had an elementary school diploma. Regarding monthly income, approximately 38% of the participants had a low income (from less than 17,002 to 22,000), 42% had a middle income (from 22,001 to 37,000), and 24% had a high income (37,001 and more). In terms of occupation, the majority were employed in the public or private sector or were self-employed (63.94%), while 27.6% were students, and 4.9% were unemployed.

3.2. Data Analysis and Results

The data were analyzed using SPSS 25 and SmartPLS 4. All Likert scale measurements exhibited Skewness and Kurtosis values within the acceptable range of +1.5/-1.5, confirming normal distribution (Tabachnick and Fidell, 2013). Exploratory factor analysis with Varimax rotation was conducted to assess construct validity (Watkins, 2018, p. 220). The Kaiser-Meyer-Olkin (KMO) value of 0.818 and Bartlett's test results (5178.0, df=253, p=0.000), along with communalities exceeding 0.5, confirmed the appropriateness of the factor analysis. Factor loadings, which ranged from 0.722 to 0.968 (see Table 2), were considered satisfactory (Hulland, 1999). Variance-inflation-factor (VIF) values ranged from 1.401 to 3.970, indicating that the model did not suffer from multicollinearity issues (Hair et al., 2019), thereby meeting the established criteria.

Table 2: Factor Loadings of Each Statements

Factors	Statements	Factor Loadings
Proactive Social Media Crisis Management (PSMCM)	Starbucks Türkiye has a comprehensive crisis management plan.	0.907
	Starbucks Türkiye actively follows social media to be prepared for possible crisis situations	0.856
	Starbucks Türkiye has the foresight to manage crises.	0.799
Reactive Social Media Crisis Management (RSMCM)	Starbucks Türkiye is not quick to provide clear and understandable information sharing on social media in case of crisis.	0.885
	Starbucks Türkiye cannot mobilize quickly on social media in a crisis.	0.881
	Starbucks Türkiye is slow to make transparent and honest disclosures on social media in crisis situations.	0.840
Communication Management Quality (CMQ)	Starbucks Türkiye's communication was clear and easy to understand during these crises.	0.815
	The information Starbucks Türkiye shared during these crises was accurate and reliable.	0.812
	Starbucks Türkiye uses multiple communication channels during the crisis.	0.794
	The language used by Starbucks Türkiye during these crises was empathetic and understandable.	0.740
Customer Trust (CT)	Starbucks Türkiye demonstrates competence in handling crises.	0.871
	I am likely to remain loyal to Starbucks Türkiye even after a crisis.	0.815
	Starbucks Türkiye cares about its customers.	0.767
	Starbucks Türkiye is reliable and consistent in its actions.	0.761

	I think Starbucks Türkiye acted in my best interest.	0.722
Corporate Reputation (CRp)	Starbucks is perceived as trustworthy by the Turkish public.	0.968
	Starbucks Türkiye has a strong and positive reputation.	0.904
	Starbucks Türkiye is seen as a leader in its sector.	0.884

Table 3 presents the reliability and validity assessment results. The measurement model's reliability and validity were evaluated using composite reliability (CR > 0.70) and average variance extracted (AVE > 0.50) (Wong, 2013; Ramayah et al., 2018; Henseler et al., 2009). The analysis demonstrated strong reliability (CR ranging from 0.870 to 0.942) and convergent validity (AVE ranging from 0.622 to 0.845), with all metrics surpassing the recommended thresholds (Hair et al., 2011). Cronbach's alpha values between 0.800 and 0.909, which exceed the minimum criterion of 0.60 (Hair et al., 2019), suggest strong internal consistency. The final analysis involved assessing the heterotrait–monotrait ratio (HTMT) (Hair et al., 2021; Henseler et al., 2015). All HTMT values were below 0.85 (Hair et al., 2022, 2019; Henseler et al., 2015), confirming discriminant validity.

Table 3: Composite Reliability, Average Variance Extracted, Correlations and Discriminant Validity Checks

Latent Variables	α	CR	AVE	1	2	3	4	5
1-CRp	0.909	0.942	0.845					
2-CT	0.850	0.891	0.622	0.432				
3-PSMCM	0.820	0.891	0.732	0.584	0.690			
4-CMQ	0.800	0.870	0.626	0.564	0.828	0.641		
5-RSMCM	0.838	0.902	0.755	0.720	0.719	0.724	0.766	

Model fit was assessed using the Standardized Root Mean Square Residual (SRMR) and Normed Fit Index (NFI). An SRMR value below 0.10 and an NFI value close to 1 indicate a satisfactory model fit (Hu and Bentler, 1998; Bentler and Bonett, 1980; Ding et al., 1995). Alongside a Chi-square value of 2897.409, the SRMR of 0.093 and NFI of 0.706 suggest that the model fit is acceptable. To assess the model's quality, a PLSpredict analysis was conducted using training and holdout samples to evaluate predictions from the PLS path model estimates (Shmueli et al., 2016; Hair et al., 2019, 2022). The Q^2 value, which must exceed zero, is used to measure predictive accuracy, with thresholds of 0, 0.25, and 0.50 representing small, medium, and large predictive significance in the PLS-path model, respectively (Geisser, 1974; Shmueli et al., 2016; Hair et al., 2019). The Q^2 values in this study, ranging from 0.432 to 0.477, indicate that the model has established predictive relevance. Additionally, the R^2 measurement evaluates the model's explanatory power, with values closer to 1 indicating stronger performance (Shmueli and Koppius, 2011; Hair et al., 2019; Henseler et al., 2009), and values of 0.75, 0.50, and 0.25 are considered substantial, moderate, and weak, respectively. Table 4 demonstrates the model's satisfactory predictive power, supported by Q^2, and R^2. Table 4, below, depicts the prediction power of model.

Table 4: Prediction Power of the Model

Latent Variables	R^2	Q^2
CRp	0.450	0.432
CT	0.596	0.477
CQM	0.447	0.439

Table 5 presents the results of the bootstrapping procedure, which used 5,000 subsamples ($p < 0.05$ and $t > 1.96$) to assess the significance of the path coefficient values (Hair et al., 2022; Becker et al., 2023). The findings indicate a significant relationship between reactive social media crisis management and corporate reputation (β = 0.229, t = 3.708, p = 0.000), customer trust (β = 0.213, t = 3.708, p = 0.000), and communication quality management (β = 0.251, t = 4.936, p = 0.000), supporting H1, H3, and H7. Communication quality management also has a significant impact on customer trust (β = 0.455, t = 11.650, p = 0.000), supporting H6. However, no significant relationship was observed between communication quality management and corporate reputation (β = 0.258, t = 1.444, p = 0.149), leading to the rejection of H5. Additionally, proactive social media crisis management has a positive and significant impact on corporate reputation (β = 0.489, t = 6.222, p = 0.000), customer trust (β = 0.223, t = 4.485, p = 0.000), and communication quality management (β = 0.485, t = 8.562, p = 0.000), indicating that H2, H4, and H8 are supported. Finally, customer trust has a significant impact on corporate reputation (β = -0.144, t = 2.459, p = 0.014), leading to the acceptance of H9.

Table 5: Structural Model Assessment

Relationship	Path Coefficients (β)	Standard Deviation	T Statistics	P values	Decision
CT->CRp (H1)	-0.144	0.058	2.459	0.014	Supported
RSMCM -> CRp (H2)	0.229	0.062	3.708	0.000	Supported
RSMCM->CT (H3)	0.213	0.042	5.045	0.000	Supported
RSMCM -> CQM (H4)	0.251	0.051	4.936	0.000	Supported
CQM->CRp (H5)	0.158	0.109	1.444	0.149	Not supported
CQM->CT (H6)	0.455	0.039	11.650	0.000	Supported
PSMCM->CRp (H7)	0.489	0.079	6.222	0.000	Supported
PSMCM->CT (H8)	0.223	0.050	4.485	0.000	Supported
PSMCM->CQM (H9)	0.485	0.057	8.562	0.000	Supported

4. DISCUSSIONS AND CONCLUSION

This study investigates the effect of social media crisis management, both proactive and reactive, customer trust and communication quality management on corporate reputation. Based on the empirical results this study contributes to corporate reputation literature in terms of either social media crisis management and communication quality management or customer trust.

Echoing prior research on corporate reputation (e.g., Razak et al., 2023; Kibu et al., 2023; Arzberger, 2022; Salam and Jahed, 2023), this study reveals that proactive social media crisis management enhances corporate reputation, while reactive social media crisis management diminishes it. These findings suggest that being proactive before or during a crisis is crucial for building or maintaining corporate reputation. Proactive strategies entail being prepared ahead of or during a crisis by emphasizing transparency, authenticity, and responsiveness to tackle the challenges of misinformation and public scrutiny (Gasana, 2024). Conversely, relying on reactive crisis management can result in diminished credibility and trust among stakeholders, especially in today's digital era, where social media significantly influences public perception and organizational reputation (Triantafillidou, 2024). As a result, this study suggests that organizations should focus on proactive approaches to effectively manage crises driven by social media backlash, ultimately preserving their credibility and reputation over the long term. On the other hand, proactive social media crisis management is essential for maintaining customer trust and ensuring high-quality communication, especially in today's fast-paced digital environment. Proactive social media crisis management involves anticipating potential crises and developing strategies to address them before they escalate. This approach can significantly impact customer trust and communication quality. Proactive management can build trust by demonstrating transparency.

According to Zheng (2023) organizations that communicate openly and transparently during crises can enhance customer trust, as transparency reduces uncertainty and signals accountability. A quick and effective response can mitigate the adverse effects of a crisis. Coombs (2007) points that timely communication is crucial in crisis management, as it helps to control the narrative and reduce misinformation. Consistent messaging across platforms helps maintain credibility. As Coombs and Holladay (2014) suggest consistency in crisis communication helps reinforce organizational reliability and integrity, which are critical components of trust. Proactive management ensures that communication is clear and concise. Liu et al. (2011) emphasize that clear messaging is essential during a crisis to minimize confusion and ensure accurate information is conveyed to stakeholders, while Schultz et al. (2011) argue that engaging in two-way communication, which allows for feedback and interaction, is critical for enhancing communication quality, and Veil et al. (2011) highlight that utilizing multiple social media platforms can broaden the reach and effectiveness of crisis communication efforts. Therefore, proactive social media crisis management is essential for establishing and preserving customer trust and facilitating effective communication. Through emphasizing transparency, prompt replies, uniform messaging, precision, interaction, and leveraging diverse platforms, corporations can proficiently handle crises and bolster their image.

This study highlights the essential role of reactive social media crisis management in influencing customer trust, communication quality, and corporate reputation. Reactive social media crisis management entails addressing crises as they unfold, with the goal of quickly resolving issues and minimizing negative consequences. This strategy can have a substantial impact on customer trust, communication quality, and corporate reputation. Delays in response, often characteristic of reactive management, can diminish customer trust. Coombs (2007) notes that a delayed reaction to a crisis can result in negative perceptions and loss of trust, as stakeholders may perceive the organization as unprepared or evasive. Authentic responses, including sincere apologies and corrective actions, can help rebuild trust, particularly when the organization takes responsibility for the crisis, as found by Claeys and Cauberghe (2014). The study shows that reactive strategies can undermine customer trust. Reactive management may also cause messaging inconsistencies, as Schultz et al. (2011) indicate that

inconsistent messages across various channels can confuse stakeholders and weaken communication quality. Although challenging, a swift response is crucial. Stephens and Malone (2009) assert that effective reactive crisis communication involves the rapid dissemination of accurate information to counteract rumors and misinformation. Findings indicate that even within reactive strategies, accurate and consistent messaging enhances perceived communication quality. Additionally, effective reactive management can limit reputation damage. Colleoni et al. (2024) propose that a company's crisis response strategy greatly influences its reputation, as stakeholders assess the organization based on its response tactics. Social media plays a key role in shaping perceptions; Ott and Theunissen (2015) observe that these platforms enable organizations to engage directly with stakeholders, influencing perceptions and potentially reducing negative impacts on reputation. The study concludes that reactive social media crisis management significantly affects customer trust, communication quality, and corporate reputation. Although challenges such as delayed responses and inconsistent messaging can negatively impact these areas, authentic communication and prompt actions can mitigate damage and restore trust.

Effective management of communication quality is essential for developing and sustaining customer trust. This requires ensuring that communications are clear, consistent, and responsive to customers' needs. Clarity and consistency are crucial for building trust. Homburg et al (2010) emphasize that maintaining consistency across communication channels helps build trust by minimizing ambiguity and ensuring that customers receive dependable information. Responsiveness to customer inquiries and feedback is another key factor in enhancing trust. Grönroos (2015) points out that prompt and empathetic responses to customer issues demonstrate a company's commitment to satisfaction and strengthen trust. Customizing communication to address individual customer needs also fosters trust. Verhoef et al. (2010) note that personalized communication builds customer trust by showing that the company values and understands its customers. Therefore, effective communication quality management is shown to increase customer trust.

Moreover, customer trust is crucial in shaping a company's corporate reputation. A strong trust relationship with customers can enhance a company’s reputation, while a lack of trust can harm it. Trust is a foundational element of a strong corporate reputation. Fombrun and Van Riel (2004) argue that trust forms the basis for a strong reputation, as it reflects the belief that the company acts responsibly and ethically. Trust also leads to customer loyalty and advocacy, which positively impact reputation. Doney and Cannon (1997) indicate that companies with high levels of trust are more likely to have loyal customers who become advocates, thus improving the company’s reputation through positive word-of-mouth. Companies with a strong level of customer trust can better withstand reputational damage during crises. Laufer and Coombs (2006) suggest that trust serves as a buffer in crises, as customers are more inclined to give the company the benefit of the doubt and maintain a positive perception. Thus, effective communication quality management is key in establishing and maintaining customer trust, which in turn plays a vital role in shaping corporate reputation. By focusing on clarity, consistency, responsiveness, and personalization in communication, companies can build customer trust, leading to a stronger corporate reputation characterized by customer loyalty, advocacy, and resilience during crises.

Interestingly, the findings did not support the hypothesis that crisis communication quality affects corporate reputation (H5). This outcome could be attributed to several factors. First, corporate reputation is a complex construct affected by multiple elements beyond communication quality, including product quality, corporate social responsibility, financial performance, and market presence. Fombrun and Van Riel (2004) state that corporate reputation results from a complex interaction of various organizational activities and stakeholder perceptions. Therefore, while communication quality is important, it may not be the most critical factor influencing reputation in this particular context. Additionally, the impact of communication quality on corporate reputation can differ across industries. In certain sectors, other factors may have a more significant role in shaping reputation. As noted by Dowling (2004), industry-specific dynamics can influence the relative importance of different factors that contribute to corporate reputation. For instance, in industries where product innovation or service reliability is crucial, communication quality might be of secondary importance such as the Starbucks, that is the case of present study, demonstrates innovation through its seasonal beverages and high-quality service (Oe and Deng, 2024; Naibaho, et al., 2023). Moreover, the effect of communication quality management on corporate reputation might be more long-term than immediate. Hall (1993) suggests that building a reputation is a long-term process, and changes in communication practices may not lead to immediate shifts in reputation. Consequently, while communication quality management is generally considered a key factor in shaping corporate reputation, the lack of support for this hypothesis in the study could be due to the intricate nature of reputation, industry-specific factors, and timing considerations. Further research could delve deeper into these aspects or examine additional variables that might mediate or moderate the relationship between communication quality and corporate reputation.

In conclusion, this study reveals that proactive social media crisis management plays a crucial role in enhancing corporate reputation and maintaining customer trust through effective communication strategies. Organizations are encouraged to adopt proactive measures, including transparent and consistent messaging, to preemptively address crises and mitigate misinformation. While reactive crisis management can still manage damage with prompt and authentic responses, it tends to undermine trust and communication quality when not executed swiftly and consistently. Moreover, the study highlights

that while communication quality is vital for trust-building, its direct impact on corporate reputation may vary across industries and requires a long-term perspective. These insights suggest a need for further research to explore additional factors that mediate the relationship between communication quality and corporate reputation.

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Appendix: Survey Items

Constructs	Statements
Proactive Social Media Crisis Management (PSMCM)	Starbucks Türkiye has a comprehensive crisis management plan.
	Starbucks Türkiye actively follows social media to be prepared for possible crisis situations
	Starbucks Türkiye has the foresight to manage crises.
Reactive Social Media Crisis Management (RSMCM)	Starbucks Türkiye is not quick to provide clear and understandable information sharing on social media in case of crisis.
	Starbucks Türkiye cannot mobilize quickly on social media in a crisis.
	Starbucks Türkiye is slow to make transparent and honest disclosures on social media in crisis situations.
Communication Management Quality (CMQ)	Starbucks Türkiye's communication was clear and easy to understand during these crises.
	The information Starbucks Türkiye shared during these crises was accurate and reliable.
	Starbucks Türkiye uses multiple communication channels during the crisis.
	The language used by Starbucks Türkiye during these crises was empathetic and understandable.
Customer Trust (CT)	Starbucks Türkiye demonstrates competence in handling crises.
	I am likely to remain loyal to Starbucks Türkiye even after a crisis.
	Starbucks Türkiye cares about its customers.
	Starbucks Türkiye is reliable and consistent in its actions.
	I think Starbucks Türkiye acted in my best interest.
Corporate Reputation (CRp)	Starbucks is perceived as trustworthy by the Turkish public.
	Starbucks Türkiye has a strong and positive reputation.
	Starbucks Türkiye is seen as a leader in its sector.

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KEY FACTORS THAT INFLUENCE THE SUCCESSFUL IMPLEMENTATION OF HR ANALYTICS IN ORGANIZATIONS: A SYSTEMATIC REVIEW

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ABSTRACT

Purpose- In today's rapidly evolving business landscape, organizations are increasingly recognizing the significance of leveraging HR analytics to drive data-driven decision-making and enhance HR outcomes. However, the successful implementation of HR analytics hinges upon a careful consideration of various factors. This paper aims to explore and analyze the key factors that influence the successful implementation of HR analytics, drawing on a comprehensive literature review and expert insights.

Methodology- A systematic literature review is conducted to examine the previous published articles in the HR analytics domain. The Emerald database revealed 37 articles that passed the inclusion criteria and quality assessment.

Findings- The study identifies several critical factors that play a pivotal role in the successful implementation of HR analytics. Leadership support and organizational culture emerge as paramount drivers, as they foster a data-driven decision-making culture, emphasizing the value of evidence-based HR practices.

Conclusion- These factors facilitate the integration of analytics into HR processes and ensure the commitment necessary to overcome implementation challenges.

Keywords: HR analytics, leadership support, data quality, data integration, technology infrastructure, ethical considerations.
JEL Codes: M50, M52

1. INTRODUCTION

As the field of human resources (HR) continues to evolve, organizations are increasingly recognizing the potential of HR analytics in driving informed decision-making and improving HR outcomes (Steven McCartney, 2021). HR analytics involves the use of data, statistical analysis, and predictive modeling techniques to gain insights into various HR processes and practices. By leveraging data-driven insights, organizations can optimize their workforce management, enhance employee engagement, and align HR strategies with broader business goals. The successful implementation of HR analytics, however, is not a straightforward task. It requires careful consideration of various factors that can influence its effectiveness and impact. In this paper, we aim to explore these key factors and their implications for organizations seeking to leverage HR analytics for strategic advantage (Mustafa Nourallah and Peter Öhman, 2022).

Drawing upon an extensive review of the existing literature and insights gained from discussions with experts in the field, we identify and analyze the factors that influence the successful implementation of HR analytics (Attia Aman-Ullah, 2022). We delve into the significance of leadership support, data quality and integration, HR analytics skills and capabilities, technology infrastructure and tools, as well as ethical and privacy considerations. Leadership support and organizational culture play a crucial role in driving the successful implementation of HR analytics. When leaders emphasize the importance of data-driven decision-making and create a culture that values evidence-based HR practices, it fosters employee engagement and facilitates the integration of analytics into HR processes (Chiehyeon Lim, 2017).

Data quality and integration are fundamental for effective HR analytics. Organizations must ensure the accuracy, completeness, and consistency of their data to generate reliable insights. Additionally, integrating data from various HR systems and sources allows for a comprehensive view of the workforce, enabling more accurate analysis and predictions. The

presence of HR professionals with the necessary analytics skills and capabilities is another critical factor (Emmanuel Eze, 2021). Investing in training and development programs to enhance the analytical skills of HR practitioners is essential to effectively utilize HR analytics. Developing a data-driven mindset and fostering a culture of continuous learning among HR professionals contribute to successful implementation. Technology infrastructure and tools are pivotal in supporting HR analytics implementation (Chiehyeon Lim, 2017). Organizations should invest in robust HR information systems, analytics platforms, and data visualization tools to facilitate data collection, analysis, and reporting. User-friendly interfaces and intuitive tools enable HR professionals to explore and interpret data effectively, empowering them to make informed decisions.

Ethical and privacy considerations are paramount when implementing HR analytics. Organizations must comply with legal and regulatory requirements, establish proper data governance, and ensure data security and confidentiality (Gulati, 2021). Transparent policies and procedures that protect employee privacy and maintain trust in the HR analytics process are crucial. By understanding and addressing these key factors, organizations can maximize the potential of HR analytics, leading to data-driven decision-making, improved HR outcomes, and overall organizational performance. In the subsequent sections of this paper, we will delve into each factor in detail, discussing its significance and exploring how it has been addressed in the existing literature. We will also provide insights and recommendations for organizations seeking to implement HR analytics successfully.

This research aims to provide answers to the following main questions:

RQ1: What are the most common HR analytics processes and techniques used by organizations to achieve their strategic objectives?

RQ2: What are the major challenges faced by organizations in implementing HR analytics, and how have these challenges been addressed in the literature?

RQ3: What are the ethical considerations and guidelines that organizations need to follow when conducting HR analytics, and how have these considerations been addressed in the literature?

RQ4: What are the HR analytics tools and technologies that organizations have used to collect and analyze HR data, and what are their benefits and limitations?

RQ5: What are the key factors that influence the successful adoption and implementation of HR analytics in organizations, and how have these factors been addressed in the literature?

This flow of this paper is structured as follows. The literature section will provide background information about the main topic of this article and highlights some of the previous research in the domain. Next, is the research design where information about the data source, inclusion criteria, and quality assessment are presented. The results and discussion sections will provide details on the findings and answers to the research questions. Finally, the conclusion section will highlight the main outcome of this paper and address some limitations and suggest future research.

2. LITERATURE REVIEW

The successful implementation of HR analytics is crucial for organizations to effectively leverage their human resources and make data-driven decisions. HR analytics refers to the use of data and statistical methods to gain insights into various aspects of the workforce, such as recruitment, performance management, employee engagement, and talent development. While the potential benefits of HR analytics are widely recognized, the literature emphasizes the importance of understanding the key factors that influence its successful implementation. This literature review aims to provide an overview of the existing research on the factors that contribute to the successful implementation of HR analytics in organizations.

Factors Influencing the Successful Implementation of HR Analytics

Leadership Support and Organizational Culture: Leadership support plays a vital role in driving the successful implementation of HR analytics. Research suggests that top management commitment and support are essential for creating a culture that values data-driven decision-making. When leaders emphasize the importance of HR analytics and actively encourage its use, it fosters a culture of evidence-based decision-making and encourages employees to embrace analytics in their HR practices (Chiehyeon Lim, 2017).

Data Quality and Integration: The availability of high-quality data and its integration across HR systems and processes are critical factors for successful HR analytics implementation. Organizations need to ensure data accuracy, completeness, and consistency to generate reliable and meaningful insights. Effective data integration, involving the integration of various HR systems and data sources, enables a comprehensive view of the workforce, enabling more accurate analysis and predictions (Francesco Calza, 2019).

HR Analytics Skills and Capabilities: Organizational capacity to effectively utilize HR analytics depends on the presence of skilled HR professionals who possess the necessary analytical skills and capabilities. The literature highlights the importance of investing in training and development programs to enhance the analytical skills of HR practitioners. Developing a data-driven mindset and fostering a culture of continuous learning and upskilling are essential for successful HR analytics implementation (Combs, 2020).

Technology Infrastructure and Tools: The availability of appropriate technology infrastructure and tools is another crucial factor that influences the successful implementation of HR analytics. Organizations need to invest in robust HR information systems, analytics platforms, and data visualization tools to support data collection, analysis, and reporting. User-friendly interfaces and intuitive tools make it easier for HR professionals to explore and interpret data, facilitating effective decision-making (Gulati, 2021).

Ethical and Privacy Considerations: As HR analytics involves the processing of sensitive employee data, organizations must address ethical and privacy concerns. Compliance with legal and regulatory requirements, proper data governance, and ensuring data security and confidentiality are essential for successful implementation. Organizations need to establish clear policies and procedures to protect employee privacy and maintain trust in the HR analytics process (Babac, 2022).

This literature review highlights several key factors that influence the successful implementation of HR analytics in organizations. Leadership support and organizational culture, data quality and integration, HR analytics skills and capabilities, technology infrastructure and tools, and ethical and privacy considerations emerge as critical factors in the literature. Understanding and addressing these factors will enable organizations to harness the full potential of HR analytics, leading to data-driven decision-making and improved HR outcomes.

3. RESEARCH DESIGN AND DATA

In this section, we will outline the methodology employed in conducting our systematic literature review on the key factors influencing the successful implementation of HR analytics in organizations. Our review aimed to provide a comprehensive and rigorous analysis of the available literature by following a systematic approach.

Data Sources and Search Strategies- In this study, we focused on accessing the Emerald database, a reputable source for academic research articles. The Emerald database covers a wide range of disciplines, including data analysis and data science, providing access to a diverse collection of scholarly articles. To develop an effective search strategy, we utilized a combination of keywords and Boolean operators tailored to the research topic. The search strategy aimed to capture articles that specifically addressed the intersection of data analysis, data science, predictive analytics, sentiment analysis, and algorithms. By incorporating these keywords, we targeted studies that explored the application of these techniques in various domains and industries. A total number of 116 articles emerged as initial results.

Inclusion/Exclusion Criteria- To ensure the relevance and quality of the literature included in our study, we established specific inclusion and exclusion criteria. Included articles needed to be written in English and focus on the implementation of HR analytics in organizations, providing insights into key success factors. Exclusion criteria involved articles that were not peer-reviewed, did not relate to HR analytics, or lacked relevance to our research questions. A total number of 37 articles were the results of these criteria.

Quality Assessment- To ensure the quality of the included articles, we performed a rigorous quality assessment following the guidelines of the Critical Appraisal Skill Program (CASP, 2018) tool as illustrated in table 1. Factors such as the clarity of research aims and objectives, specification of HR analytics processes and technology used, appropriateness of data collection methods, reliability and validity of measures, adequacy of statistical techniques, insights into key factors influencing implementation, and practical implications and recommendations were considered. Articles demonstrating high methodological rigor and relevance to our research questions were given greater weight in the analysis.

4. RESULTS

There are 37 research articles considered for this assessment. Table 2 shows the results. Using threshold of 50% or more in the total assessment yields 16 articles to be considered for the analysis. These articles were used to provide supporting evidence to answer the research questions. The following sections will provide the research question and its corresponding findings.

RQ1: What are the most common HR analytics processes and techniques used by organizations to achieve their strategic objectives?

Upon extensive analysis of the literature, a multifaceted landscape of HR analytics processes and techniques emerges, showcasing the depth of organizational strategies. The journey towards informed decision-making starts with meticulous data collection, where organizations gather a trove of information capturing the diverse facets of their workforce. Subsequent

processes of data cleaning, preparation, analysis, and visualization sculpt raw data into actionable insights (Attia Aman-Ullah, 2022). Diving into the realm of advanced techniques, the literature shines a spotlight on the art of regression analysis, predictive modeling, clustering, and classification algorithms. These sophisticated tools serve as the compass guiding organizations through the labyrinth of data, allowing them to unravel patterns, forecast trends, and optimize HR practices (Combs, 2020). The strategic deployment of these techniques doesn't merely provide a snapshot of the present; it paints a dynamic canvas of the future, enabling HR professionals to align their actions with upcoming workforce dynamics (Caitlin Ferreira, 2023).

RQ2: What are the major challenges faced by organizations in implementing HR analytics, and how have they been addressed in the literature?

Within the intricate tapestry of HR analytics implementation, challenges form steppingstones towards mastery. The journey is often marked by data quality concerns, stemming from inaccuracies and inconsistencies in HR datasets (Babac, 2022). Yet, in this crucible of challenges, solutions bloom. Organizations respond by establishing robust data governance structures that ensure data quality and availability. This foundation paves the way for robust analytics, enabling accurate insights that shape HR strategies (Emmanuel Eze, 2021).

Addressing the human dimension, skill gaps emerge as a common obstacle. HR analytics, with its blend of data science and HR expertise, necessitates a specialized skill set. However, the literature uncovers a pathway to enlightenment: investment in training programs. Organizations cultivate their workforce by enhancing analytical skills among HR practitioners, thereby nurturing a crop of data-savvy professionals ready to navigate the complex terrain of HR analytics (Choo Jun Tan, 2017). Resistance to change, an age-old challenge, finds resonance even in the world of analytics. Here, the solution is two-fold: change management and communication. With the right strategies, organizations can navigate resistance, transform it into enthusiasm, and seamlessly integrate analytics into the organizational fabric (James Lappeman, 2022).

RQ3: What are the ethical considerations and guidelines that organizations need to follow when conducting HR analytics, and how have they been addressed in the literature?

Ethical considerations cast a profound shadow over the HR analytics landscape, underscoring the importance of responsible data stewardship. The literature showcases a tapestry of ethical guidelines woven meticulously to safeguard the integrity of the process. Informed consent emerges as a cornerstone, emphasizing respect for individual privacy and autonomy (Attia Aman-Ullah, 2022). Data privacy and security concerns are addressed through rigorous compliance with legal and regulatory requirements, ensuring the sanctity of employee information (Chiehyeon Lim, 2017).

Organizations step into the role of ethical custodians, embracing practices such as data anonymization to shield identities and fostering transparent communication to build trust. A symphony of privacy impact assessments, data protection policies, and ethical codes guides organizations as they navigate the intricate dance between data innovation and ethical responsibility (James Lappeman, 2022).

RQ4: What are the HR analytics tools and technologies that organizations have used to collect and analyze HR data, and what are their benefits and limitations?

The landscape of HR analytics is adorned with an array of tools and technologies, each a brushstroke contributing to the masterpiece of informed decision-making. At the heart of this arsenal lies the HR Information System (HRIS), a bedrock upon which HR analytics is built. These systems amplify data accuracy, streamlining the process of data collection and enabling organizations to embark on their analytics journey (Chiehyeon Lim, 2017).

Data analytics software takes the stage, acting as a conductor orchestrating the complex symphony of data transformation and analysis. These tools empower organizations to derive insights from data, offering a panoramic view of workforce dynamics (Zhan, 2016). In the era of cloud computing, organizations embrace cloud-based platforms for data storage and analysis, granting them the agility to scale their analytics initiatives with ease (Caitlin Ferreira, 2023).As organizations embark on their analytics odyssey, they encounter the quintessential paradox: the very tools that empower them also pose challenges. Implementation costs loom on the horizon, yet they pale in comparison to the transformative potential these tools offer (Choo Jun Tan, 2017). Organizations navigate data integration complexities, crafting bridges between disparate data sources, and summoning forth a holistic understanding of the workforce.

RQ5: What are the key factors that influence the successful adoption and implementation of HR analytics in organizations, and how have these factors been addressed in the literature?

The symphony of HR analytics crescendos with a chorus of key factors that guide organizations towards successful adoption and implementation. At the helm stands top management support, a pillar upon which the edifice of analytics excellence is erected (Zhan, 2016). When leadership embraces data-driven decision-making, it cascades throughout the organization, fostering a culture that values evidence-based practices.

Strategic alignment emerges as a compass guiding organization, ensuring that the pursuit of HR analytics aligns harmoniously with broader organizational goals. Data quality and availability emerge as cornerstones, where organizations employ a vigilant eye to maintain data integrity, ensuring that analytics are not built upon a foundation of sand, but rather upon bedrock (Chiehyeon Lim, 2017).Within the intricate tapestry, the significance of HR professionals endowed with analytical skills cannot be overstated. Investment in these skills, coupled with a culture of continuous learning, cultivates a cadre of professionals equipped to unearth insights from data's labyrinth. As organizations navigate the seas of change, change management strategies come to the fore, steering them past the treacherous currents of resistance and guiding them towards analytics adoption. (Chiehyeon Lim, 2017).

Fostering a data-driven culture emerges as the anthem of success. Organizations imbue their ethos with data-driven decision-making, weaving it into the very fabric of daily operations. Ethics, a steady hand guiding the ship, ensures that as organizations traverse the analytics landscape, they do so responsibly, treating data as a precious resource. Table 3 summarizes the main findings for each question.

Table 3: Research Questions and Findings

Research Question	Findings
RQ1	Organizations use HR analytics processes such as data collection, cleaning, and advanced techniques like predictive modeling and clustering to transform workforce data into actionable insights, aiding strategic decision-making and future workforce planning.
RQ2	Implementing HR analytics presents challenges such as data quality issues, skill gaps, and resistance to change, which organizations address through data governance, training programs, and change management strategies to embed analytics into their processes effectively.
RQ3	Ethical considerations in HR analytics focus on informed consent, data privacy, and security, with organizations employing anonymization, transparency, and compliance with regulations to protect employee information and build trust.
RQ4	HR analytics relies on tools like HR Information Systems, data analytics software, and cloud platforms to enhance data accuracy, enable insightful analysis, and streamline integration, despite challenges such as implementation costs and data integration complexities.
RQ5	Successful HR analytics adoption hinges on top management support, strategic alignment with organizational goals, high data quality, skilled HR professionals, change management, a data-driven culture, and strong ethical standards.

5. DISCUSSION

The successful implementation of HR analytics in organizations is a complex process that requires careful consideration of several key factors. In this study, we aimed to identify and analyze the factors that influence the successful implementation of HR analytics and discuss how these factors have been addressed in the existing literature.

Leadership Support and Organizational Culture- The literature consistently emphasizes the importance of leadership support in driving the successful implementation of HR analytics. When top management demonstrates a commitment to data-driven decision-making and actively encourages the use of HR analytics, it creates a culture that values evidence-based practices. This not only enhances the adoption of HR analytics within the organization but also fosters employee engagement and encourages the integration of analytics in HR processes (Choo Jun Tan, 2017).

Data Quality and Integration- High-quality data and its integration across HR systems and processes are critical for the successful implementation of HR analytics. The literature emphasizes the need for organizations to ensure data accuracy, completeness, and consistency to generate reliable insights. Effective data integration, which involves the integration of various HR systems and data sources, allows for a comprehensive view of the workforce, enabling more accurate analysis and predictions (Francesco Calza, 2019).

HR Analytics Skills and Capabilities- The presence of skilled HR professionals with the necessary analytical skills and capabilities is another crucial factor in the successful implementation of HR analytics. The literature highlights the importance of investing in training and development programs to enhance the analytical skills of HR practitioners. Organizations should focus on developing a data-driven mindset among HR professionals and fostering a culture of continuous learning to effectively utilize HR analytics (Emmanuel Eze, 2021).

Technology Infrastructure and Tools- The availability of appropriate technology infrastructure and tools is essential for the successful implementation of HR analytics. Organizations need to invest in robust HR information systems, analytics platforms, and data visualization tools to support data collection, analysis, and reporting. User-friendly interfaces and

intuitive tools enable HR professionals to explore and interpret data effectively, facilitating informed decision-making (Francesco Calza, 2019).

Ethical and Privacy Considerations- HR analytics involves the processing of sensitive employee data, making ethical and privacy considerations crucial. Organizations must comply with legal and regulatory requirements, establish proper data governance, and ensure data security and confidentiality. The literature suggests the importance of developing clear policies and procedures to protect employee privacy and maintain trust in the HR analytics process (Zhan, 2016).

By considering these key factors, organizations can enhance the successful implementation of HR analytics and leverage data-driven insights to improve HR outcomes and overall organizational performance. Our research highlights the significance of leadership support, data quality and integration, HR analytics skills and capabilities, technology infrastructure and tools, as well as ethical and privacy considerations in the successful implementation of HR analytics. By addressing these factors, organizations can maximize the potential of HR analytics and drive informed decision-making. Future research can explore practical strategies for implementing HR analytics and measure the impact of analytics on organizational performance. Table 4 summarizes the discussion section.

Table 4: Summary of Discussion

Research Question	Findings
Leadership Support and Organizational Culture	Leadership support is crucial for successful HR analytics implementation, as top management's commitment to data-driven decision-making fosters a culture of evidence-based practices, encourages employee engagement, and promotes the integration of analytics into HR processes.
Data Quality and Integration	For successful HR analytics implementation, high-quality data—accurate, complete, and consistent—and effective integration across HR systems are essential, enabling reliable insights and comprehensive workforce analysis.
HR Analytics Skills and Capabilities	Skilled HR professionals with strong analytical capabilities are essential for successful HR analytics, and organizations should invest in training and foster a data-driven, continuous learning culture to empower HR teams.
Technology Infrastructure and Tools	A robust technology infrastructure, including HR information systems, analytics platforms, and data visualization tools, is essential for effective HR analytics, enabling efficient data collection, analysis, and user-friendly access for informed decision-making.
Ethical and Privacy Considerations	Ethical and privacy considerations are vital in HR analytics, requiring organizations to comply with legal standards, establish data governance, ensure data security, and implement clear policies to protect employee privacy and maintain trust.

6. CONCLUSION

In conclusion, this research has explored the key factors that influence the successful implementation of HR analytics in organizations. Through a systematic review of the existing literature, we have identified and analyzed these factors and discussed their significance in driving effective HR analytics practices. Leadership support and organizational culture emerged as a critical factor in the successful implementation of HR analytics. When top management demonstrates a commitment to data-driven decision-making and creates a culture that values evidence-based practices, it fosters employee engagement and facilitates the integration of analytics into HR processes. Data quality and integration were also found to be essential for successful HR analytics implementation. Organizations must ensure the accuracy, completeness, and consistency of their data to generate reliable insights. Effective data integration, involving the integration of various HR systems and data sources, allows for a comprehensive view of the workforce, enabling more accurate analysis and predictions.

Furthermore, the presence of HR professionals with the necessary analytics skills and capabilities was identified as a key factor. Investing in training and development programs to enhance the analytical skills of HR practitioners is crucial to effectively utilize HR analytics. Developing a data-driven mindset and fostering a culture of continuous learning among HR professionals contributes to successful implementation. Additionally, the availability of appropriate technology infrastructure and tools plays a crucial role in HR analytics implementation. Organizations should invest in robust HR information systems, analytics platforms, and data visualization tools to support data collection, analysis, and reporting. User-friendly interfaces and intuitive tools enable HR professionals to explore and interpret data effectively, facilitating informed decision-making.

Ethical and privacy considerations were highlighted as fundamental aspects of HR analytics implementation. Organizations must comply with legal and regulatory requirements, establish proper data governance, and ensure data security and confidentiality. Clear policies and procedures to protect employee privacy and maintain trust in the HR analytics process are

essential. By considering and addressing these key factors, organizations can maximize the potential of HR analytics, leading to data-driven decision-making, improved HR outcomes, and overall organizational performance.

This research provides valuable insights and recommendations for organizations seeking to harness the power of HR analytics for strategic advantage. However, it is important to note that each organization may have unique challenges and requirements, and therefore, customization and adaptation of these factors to specific contexts are necessary. Future research in the field can focus on exploring practical strategies for implementing HR analytics and measuring the impact of analytics on organizational performance and outcomes.

This study has shed light on the critical factors that contribute to the successful implementation of HR analytics in organizations. By recognizing the importance of leadership support, data quality and integration, HR analytics skills and capabilities, technology infrastructure and tools, as well as ethical and privacy considerations, organizations can drive effective utilization of HR analytics and gain a competitive edge in the rapidly evolving business landscape.

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WHAT SHOULD BE DONE ABOUT WORKPLACE DISCRIMINATION? A THEORETICAL PERSPECTIVE AND SOLUTIONS

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ABSTRACT

Purpose- This conceptual research study outlines discrimination in the workplace and offers solutions depending on the previous studies and relevant literature. Though anti-discrimination laws have been in force globally for a long time, there are different kinds of discrimination in organizations which are so frequent and prevalent. First of all, to compete and grow efficiently, organizations must focus on diverse inclusivity in their workforce. However, there are various kinds of workplace discrimination which jeopardize the most valuable asset, human capital in organizations.

Methodology- This research study has employed conceptual research paper style which mainly depends on discussion of one or more theoretical concepts or issues. Conceptual paper involves graphical, or narrative format and both a discussion of the relevant literature and a description of the concept being addressed and makes solutions in the end. This type of study also depends on observing the literature and focusing on already existing ideas, concepts and theories.

Findings- This study has unveiled that workplace discrimination deteriorates workflow in organizations because individuals who experience discrimination become less productive, feel less satisfied and feel less engaged overall. Additionally, discrimination in the workplace can cause legal issues for organizations and may result in expensive court battles, higher rates of turnover or huge hidden costs such as the loss of organizational reputation. Therefore, working proactively on developing a diverse workforce ensuring that a person or a group of people is not treated unfairly or unequally due to their specific characteristics is very important to reach organizational goals.

Conclusion- As a result, indirect costs may be high because the negative effects of discrimination on individuals can have a "chain effect" on the health, productivity and sustainability of workplaces. Organizations which keep ignoring the effects of workplace discrimination face a serious risk of legal action and the huge hidden costs associated with reputational loss. In short, while unacceptable higher levels of workplace discrimination may seem overwhelming, there are steps that can be taken to help improve conditions in the workplace. Consequently, the first step is to become aware of how discrimination may be hiding an organization's policies and procedures and how employees may try to adapt to protect themselves.

Keywords: Discrimination, workplace discrimination, perceptive discrimination, disability, anti-discrimination policies.
JEL Codes: M10, M12, M19

1. INTRODUCTION

This conceptual research study scrutinizes both workplace discrimination and its main types in organizations and makes recommendations on building a sound organizational structure that is capable of deactivating the antecedents of workplace discrimination. Actually, discrimination is so common in daily life, and it can be experienced anywhere such as at school, at work, or in a public place. Indeed, discrimination mainly refers to unfair treatments to a person or to a group of people by treating differently, or less favorably for some reason, especially depending on stereotypical belief or prejudiced thinking on physical appearance, gender, race, or action.

First, according to the American Psychological Association (2024), “discrimination is the unjust or prejudicial treatment of people and groups based on characteristics such as race, gender, age, or sexual orientation”. It has also been highlighted that discrimination often originates from fear, prejudice and misunderstanding which may cause public health issues such as stress-related emotional, physical, and behavioral changes (e.g. sadness, anger, sleep disorders, alcohol, tobacco, and other substance use). Moreover, discrimination types vary such as harassment and retaliation and it can be experienced indirectly as “indirect discrimination”, which refers to a law, policy or program does not seem to be discriminatory, but might have discriminatory outcomes when implemented, especially less fair to those with a certain “protected characteristic by law” (e.g. people with a

particular disability, pregnant women, or women with childcare responsibilities). However, according to Krieger (2014) discrimination does not merely occur through random acts of unjust treatment. Yet, it has been mentioned that workplace discrimination is the issue that the employer treats its employees differently, makes unfair decisions, and makes arbitrary practices specific to the individual, unless there are justified reasons and it also comprises of relations between individuals and organizations, involving privileges for members of dominant groups at the cost of deprivation for others. However, it has been highlighted that systemic unfair treatments or discrimination may occur in various forms and levels, depending on how it is expressed, by whom, and against whom including the forms of legal, illegal, overt, and covert discrimination, at the levels of organizational, structural, and interpersonal discrimination. Indeed, Okechukwu et al. (2014) stated that workplace discrimination, which is illegal and usually happens among coworkers, between employees and supervisors/employers, whether on purpose or by accident, is mainly related to the actions of organizations or individuals within them, setting unjust treatment, unfair terms and conditions that systematically deteriorate the motivation and productivity of individuals of a group to do their jobs. In fact, discrimination is harmful and perpetuates inequality because it is often prejudice based on notions of identity, and the urge to define with a certain group. Therefore, it can lead to division, hatred and even the dehumanization of other people because of their divergent racial or ethnic origin, and if anyone who faces discrimination based on identity, religion, gender or disability cannot take pleasure from his/her human rights or other legal rights on an equal basis with others.

To sum up, discrimination refers to treating a person or group with prejudice due to certain characteristics and this behavior can be either positive or negative. However, when discrimination is mentioned, it is generally understood in a negative sense. Finally, there are various kinds of discrimination, and this study primarily focuses on the workplace discrimination and its major types and the ways to tackle with the antecedents and its negative outcomes. Consequently, this paper provides a theoretical perspective on the workplace discrimination and discusses the major types of workplace discrimination in organizations. In the solution section, recommendations will be made to take steps on erasing the negative effects of workplace discrimination in organizations.

2. WORKPLACE DISCRIMINATION

Although people usually tend to treat people differently because of the peculiarities they possess, it is certain that everyone should benefit from equal rights, opportunities and responsibilities so understanding workplace discrimination is vital because it strikes at the very heart of human resources and the organization on the whole as well. Workplace discrimination, which is a pervasive issue and negatively influences beyond the victim, to all other employees of the workplace and the organization, leads to feelings of isolation, stress, and anxiety and it has destructive impacts on employee morale, well-being and professional growth in organizations. For instance, according to Xu and Chopik (2020), employees often experience workplace discrimination arising from various factors, such as their disability, physical appearance, age, gender, and race. Additionally, it has been underlined that workplace discrimination usually causes legal and economic costs in organizations, and it also has a profound effect on employees' work attitude, their job and life satisfaction which is often linked to many physical and mental health problems (e.g. hypertension, headaches, sleeping disorder, reduced motivation and commitment, increased absenteeism etc.). Similarly, Rhead et al. (2021) stated that discrimination negatively impacts people's both personal and professional lives no matter what form it takes, and workplace discrimination is related to psychological distress, anxiety and depression as well as poorer physical health and work efficiency. Besides, it has been mentioned that all of which are in turn linked to lower levels of job satisfaction and commitment, increased sickness absence as a result of feeling undervalued. Figure 1 displays the main characteristics of individuals generally protected by law against workplace discrimination:

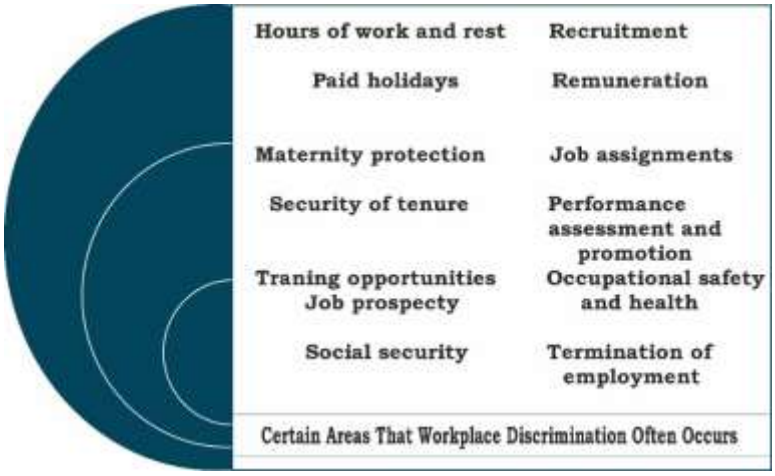
Figure 1: The Main Characteristics of Individuals Generally Protected by Law Against Workplace Discrimination Steps

Source**:** Rhead, R. D. et al. (2021).

Furthermore, workplace discrimination is a common issue which undermines equality and perception of fairness in an organization. However, diversity, equity, and inclusion are vital drivers of required organizational change, development, and the future of human resource development. That's why understanding and addressing different forms of discrimination at work is crucial for both creating and developing an inclusive, supportive work environment. Thus, this approach will help prevent from its antecedents and respond to its occurrence, hence, it will contribute to the development of a healthy and safe workspace and in this way, it will also reduce discrimination complaints and help an organization avoid violating discrimination laws. In addition, Han et al. (2022) claimed that much evidence unveils that perceiving oneself as a target of discrimination has negative effects for mental health because being the target of discriminatory acts jeopardizes mental health because it's certain that discrimination is a major job stressor and it also hinders essential psychological resources like the sense of personal mastery, work for identity and self-esteem, which all make contributions to mental health. What's more, perceptive discrimination usually happens based on various kinds of unfavorable treatment at work, and one of the most common areas of risk is through the recruitment process, in which individuals who are responsible for making hiring decisions to make stereotypical, prejudiced or biased assumptions about the candidates. According to Scheitle et al. (2023), perceiving workplace discrimination has considerable negative consequences for individuals in organizations and it also affects both the physical and mental health of employees in various ways. Indeed, people with mental health problems have limited productivity and job performance and commitment, especially in tasks demanding cognitive skills. Additionally, it has been argued that perceiving workplace discrimination is related to lower levels of job satisfaction, organizational commitment, employee morale and job efficiency. On the other hand, it has been highlighted that though the legislation of the Civil Rights Act of 1964 (Title VII) in the U.S prohibits managers/bosses or employers discrimination against individuals within the context of race, color, religion, gender or national origin especially through in hiring, promoting, and firing processes, workplace discrimination is still pervasive and the dark side of modern workplace exists because in 2020, 67,448 reports of workplace discrimination submitted to the U.S. Equal Employment Opportunity Commission. However, it only involves formal complaints and according to the survey, it was estimated that lots of victims and experiences of workplace discrimination go unreported.

To sum up, Rosetta et al. (2018) suggested that despite the laws protect employee rights in almost every nation, workplace discrimination remains a persistent problem in organizations. It has been underlined that discrimination really hurts mental wellbeing of employees because it is the unequal treatment of individuals or groups of individuals which usually leads to some groups being treated more favorably than others and if one group is treated less favorably, it can be inferred that a different group is treated in a more advantageous way. It has also been determined that discrimination can happen in various levels such as interpersonal, institutional, cultural, blatant, covert and subtle. Similarly, according to the report of released by International Labor Organization (ILO) (2024), the international labor standards have been declared by ILO and it has been stated that organizations must respect the principle of non-discrimination throughout their operations and organizations also should make qualifications, skill and experience the basis for the hiring, placement, training and improvement of their staff at all levels, and encourage and support suppliers to do likewise. Besides, it has been implied that international labor standards against workplace discrimination mainly include ethnicity, nationality, gender, religion, disability, age, trade union membership or activities and employees with parental status. Additionally, Figure 2 monitors the major areas of workplace discrimination in organizations:

Figure 2: The Major Areas of Workplace Discrimination in Organizations



Source**:** ILO, (2024).

In short, as Dhanani et al (2018) stated that workplace discrimination is often related to unfair treatments in employment depending on one or more legally protected categories and denial of training opportunities, promotions or exclusion and isolation by co-workers in organizations. It has also been mentioned that workplace discrimination leads to job stress, and it usually affects employee attitudes, behaviors, or health negatively. Ultimately, it has been concluded discrimination produces a toxic workplace

that is detrimental to everyone and it's difficult to stop discrimination at work especially when the individuals in organizations have outdated habits, mindsets, and practices.

3. THE MOST COMMON TYPES OF WORKPLACE DISCRIMINATION

Though violations of certain protected characteristics are prohibited by law roughly in all countries, workplace discrimination is still prevalent throughout the workforce in pretty much every industry. Along with workplace discrimination usually poses a threat to the organizational performance by forming a hostile work environment, it also impacts employees' career and their ability negatively to be productive. However, many people don't even recognize that they are exposed to any type of discrimination (e.g. insults, demotions, docked payrolls or blocked opportunities) at work until it is too late. In brief, this section discusses four common types of unlawful discrimination that employees may face in the workplace.

3.1. Race, Color, Ethnicity, or Nationality

This type of discrimination involves denying some individuals equal access to pay, promotion, benefits, and other work-related bonuses depending on their nationality, color, culture, ethnicity, or creed. It's certain that employment discrimination against individuals depending on race, skin color, national origin is strictly prohibited by law in almost every nation in the world, but violations of law are so prevalent especially when advertising jobs, during recruitment and selection processes, when making decisions about training, benefits, and promotion opportunities or termination of employment. First of all, Negreiros et al. (2022) stated that prejudice and discrimination, which are often studied in Social Psychology, have profound impacts on different social groups and prejudice, which is so common about color, nationality, religion, language, and ethnic origin of other people, is a negative evaluation of an individual's belonging to a group or about the group itself. Plus, it has also been underlined that prejudice mostly on race, ethnicity, color, or national origin comprises of intolerant and discriminatory behaviors and increases class and group conflict, deteriorates equality of services, and causes resentment that may lead to violence at work. Additionally, Hagelskamp and Hughes (2014) mentioned that racial/ethnic discrimination at work causes negative impacts not only for employees and but also their families, involving decreased job commitment, job satisfaction, employee morale which all may result in mental physical and health problems.

Plausibly, Relia et al. (2019) mentioned that the discrimination of race, ethnicity or nationality refers to both hate speech and crime which not only systemically and iniquitously assigns value depending on race, color, ethnicity, or nationality and but also influences the individuals negatively at workplaces especially through the processes of recruitment, firing, promotion, compensation, job training and employment decisions depending on stereotypes and assumptions about abilities, traits, or the performance of employees of certain ethnic and racial groups. It has also been defined that according to the records of Federal Bureau of Investigation (FBI) in 2018, this kind of discrimination is the largest type of hate crimes in the U.S. On the other hand, Rock and Grant (2016) emphasized the data of the A 2015 McKinsey report, which were obtained from 366 public companies, the organizations in the top quartile for ethnic and racial diversity in management have almost 35% financial returns higher than their industry mean, and the ones in the top quartile for gender diversity have likely to have 15% returns above the industry mean. To sum up, it has also been underlined that nonhomogeneous organizations are simply smarter and increasing workplace diversity will help organizations operate more productively as the diverse work teams will reexamine facts and try to remain more objective.

3.2. Disability

A disability is any condition that increases an individual's difficulty while performing specific tasks or gaining fair access within a society and it may be experienced in various forms such as cognitive, developmental, intellectual, mental, physical, sensory, or the result of several interrelated causes. In fact, they can all cause disabilities for the individuals and considerably limits a major life activity (e.g. walking, seeing, talking, hearing, learning etc.). However, workplace discrimination within the concept of disability discrimination occurs substantially based on blocking or denying certain individuals work-related opportunities or benefits based on their mental, physical etc. handicaps. Initially, Tillotson et al. (2023) claimed that one billion people live with a disability throughout the world, and it has been estimated that it is almost one person out of every seven. It has also been highlighted that though some disabilities are visible like physical ones, others are mental health issues including invisible disabilities such as chronic illnesses, eating and sleeping disorders and food or other allergies. Finally, it has been mentioned that according to the findings of a research study, 88% of employees with invisible disabilities prefer not to reveal their conditions at work to avoid stigma and discrimination and those who do not choose to disclose about long-term invisible disabilities are usually socially isolated in organizations, resulting in lower motivation, morale, and reduced performance.

Moreover, Osterud (2023) highlighted the report of the OECD that disabled people have consistently experienced considerable disadvantages, such as lower levels of employment rates than the general population, higher levels of rates of ill-treatment at work and lower levels of pay and job security. It has also been noted that the employment gap between disabled and nondisabled individuals is highly discussed in disability researches, and the reasons for this gap are not yet fully unveiled, however, the gap is a consistent global issue, though making too much investment in active labor market policies and adopting resolutions against work discrimination on disability. To sum up, Schur et al. (2017) concluded that individuals with disabilities have several obstacles

while trying to find jobs, and even those who do often earn less than those without disabilities. One of the main causes of the low income and high rates of poverty among individuals with disabilities is their poor work rates, which are prevalent both domestically and internationally. For example, in the United States, just 34% of working-age individuals with disabilities had a job in 2015, compared to 75% of individuals without disabilities. However, laws against disability discrimination have globally put into effect and as an example, The Americans with Disabilities Act (ADA) (1990) in the United States strictly prohibits discrimination against anyone based on related to a disabled person.

3.3. Gender Identity and Pregnancy or Parental Status

To start with, gender identity discrimination at workplace, which mainly includes treating individuals less favorably than another person in a similar situation based on their gender identity, is unlawful and prohibited by law nearly in all countries. Additionally, the rights of pregnant women, parental status and women with child responsibilities are the rights that cannot be violated or denied, and these fundamental rights are often protected by law globally. Hence, violations of such rights are regarded as undermining the fundamental principles of liberty and justice which usually lie at the base of all civil and political institutions and almost in all cultures throughout the world. Similarly, Oswald (2023) defined that gender discrimination is related to the unequal treatment of individuals based on their gender identity or expression and it has been underlined that though significant progress has been made throughout history, gender discrimination is still a prevalent issue at present. For instance, it has been highlighted that especially women have been put off using the right of education, employment, and political participation depending merely on their gender even recently and they are often paid less than men for doing the same job or are also less represented in leadership positions in organizations.

Similarly, Byron and Roscigno (2014) pointed out that despite its widespread illegality, pregnancy discrimination is a pervasive social issue which also involves gender-based employment inequalities based on job application and selection process, wages, employee benefits, or any other term or condition of employment. It has also been underlined that facing pregnancy or parental status type of workplace discrimination involves refusing to employ, failing to promote, or firing pregnant women after learning they are pregnant, or they have had a childbirth, or related medical conditions. Accordingly, Bose et al. (2020) mentioned the data which was obtained from International Labor Organization (ILO) dealing with the workplace discrimination of women with caregiving responsibilities in the labor market and it has been emphasized that women's participation in the labor force is 27 percentage points lower than men's throughout the world and wage gaps between men and women have been observed globally and women's income is only 77% as high as men's on average.

Last but not least, today, organizations face challenges of confronting numerous types of discrimination problem. Moreover, apart from the four major types of discrimination at workplaces, according to the ILO (2024), there are definite international labor standards addressing different kinds of workplace discrimination. Also, Table 1. highlights the common types of workplace discrimination depending on the Discrimination (Employment and Occupation), Convention, 1958, (No. 111) Article 1:

Table 1: Types of Workplace Discrimination Depending on the ILO Convention, 1958, (No. 111) Article 1

Discrimination includes	Definition
Race	Based on perceived racial differences, which causes various types of racial discrimination and harrasment.
Color	According to the U.S, Equal Employment Opportunity Commission (EEOC), racial discrimination is defined as "treating an applicant or employee unfavorably because they are of a certain race or because of personal characteristics associated with race (such as hair texture, skin color, or certain facial features)" (U.S. EEOC, 2017).
Sex	A violation of the equality of rights and equal opportunities of people based on sexual and gender differences.
Religion	A bias against someone (a job seeker or an employee) because of his (her) religious beliefs; the restriction of people's rights based on their religious affiliation.
Political opinion	When an individual is treated unfairly, or is denied though having the same opportunities as others, because of their political beliefs, affiliation, or activity.
National extraction	Based on perceived national differences, which results leads to numerous types of ethnic discrimination.
Social origin	Discrimination occurs basis on the social origin raises the social exclusion and deprives those affected of prospects of development and self-fulfilment, in turn affecting overall economic development. It also threatens social cohesion and engagement.

Source**:** Alaverdov, T., & Chinchaladze, T. (2022); Snyder, C. R., & Schwartz, M. R. (2019); Lee, K. S., & Kent-Jensen, L. (2022); Council of Europe Report (2022).

4. SOLUTIONS

The aim of this article is not only to present a conceptual framework on workplace discrimination but also to provide a comprehensive perspective on its major types which are often experienced by the individuals in organizations. Today, despite constitutional and legislative protections globally against unfair discrimination at workplaces, workplace discrimination is still a pervasive issue which jeopardizes the workflow in organizations and lead to employee burnout and higher rates of employee turnover. In fact, Gloor et al. (2024) pointed out that workplace discrimination, especially on gender discrimination in organizations has moved underground because of increasing global awareness, changes in policies and laws, and social acceptance of protected groups since the 1960s. It has also been underlined that workplace incivility and unfair treatments obviously lead to a range of destructive effects for victims, bystanders, and the organizations. Therefore, only the leaders and the employees can play a vital role in defining and overcoming discrimination in all its forms. Consequently, Table 2. indicates the three major discrimination and the solutions to be made:

Table 2: The Three Major Discrimination Forms and the Suggested Solutions

Type of Discrimination	Suggested Solutions
Race, Color, Ethnicity, or Nationality	Treating an applicant or an employee unfavorably associated with his/her certain race, skin color, or certain ethnicity or nationality is one of the most common types of discrimination at workplaces. If any individual in an organization faces such discrimination, he/she mustn't be afraid to complain or truthfully report workplace discrimination. If any individual at a workplace believes that one of the forms of such discrimination is being applied to him/her, or if he/she has any concerns about this topic, they should seek legal guidance. Besides, management team should take steps to deal with these forms of discrimination by creating diverse training programs, acknowledging and recognizing a range of future religious and cultural holidays and mixing up teams from various people belonging different race, ethnicity, or nationality.
Disability	An individual is considered to be disabled if he/she has a 'physical or mental impairment'. First, if anyone has any of the conditions, they should talk about the details about their condition to the employers and managers in order to ensure that their rights are protected. Moreover, if they believe that they face disability discrimination at work, they should report forms of discrimination they face in writing and talk to HR specialists. Plus, employers and management team must take steps to overcome disability discrimination by employing and supporting disabled people. Acknowledging and raising awareness about disability and making the workplace more accessible.
Gender Identity and Pregnancy or Parental Status	First, gender identity is defined as a person's psychological identification as male or female. However, unless anyone is not bothered by anyone about his/her gender identity, everyone should accept people's gender identity and their preferences at the workplace. Furthermore, it is clear that pregnant women have limited mobility and pregnancy discrimination involves the discrimination of a woman because of pregnancy, childbirth, or a medical condition related to pregnancy or childbirth and it can be toward applicants or current employees. And parental status discrimination is defined as a person who is treated unfairly, or is denied the same opportunities as others, because they do or don't have children. Asking a person at a job interview if they have children or refusing to employ a person without children is not fair. Therefore, employers and managers must deal with such discriminations by reminding staff of their responsibility not to discriminate against others, training their staff to recognize and understand discrimination and training their managers/supervisors to deal with gender identity and pregnancy or parental status discrimination complaints.

To sum up, it is obvious that, apart from these forms of workplace discrimination, there are numerous rarely discussed, or often ignored, stereotypes and biases in organizations. In fact, all common forms of discrimination can infiltrate practices, behaviors, and attitudes in organizations, each with potentially detrimental consequences for the employees and it will eventually deteriorate the workflow at workplaces and decrease the moral and productivity of the individuals. Indeed, Bobel et al. (2018) pointed out that workplace discrimination occurs if any employee experiences actions such as insults, demotions, docked payrolls, and blocked opportunities, due to their identities, age, health, or sex, race, color, ethnicity, or nationality etc., and finally discrimination in the labor market may unfavorably affect the economic performance of a country's economy as well.

5. CONCLUSION

To sum up, although there have been increased reforms on equality, diversity advocacy efforts aimed at eliminating all types of workplace discrimination in organizations recently, it is so prevalent that most people still experience unfair treatments at work.

Primarily, setting the standards to overcome the main barriers which are originated from workplace discrimination is very important because it can be costly to businesses in terms of time and money, morale, productivity, and reputation, so employers or leaders are also legally required to create environments free from sexual harassment, discrimination, and vilification. Thus, taking preemptive precautions to respond and prevent workplace discrimination, which often violates the rights of legally protected characteristics of people, is key to create a more just and equitable workplace for individuals. In brief, here are some general offers that can be made to tackle with the antecedents and effects of workplace discrimination as follows:

Sharing corporate anti-discrimination policies and rules beforehand: Not only should HR specialists and leaders set a good example, but they also need to ensure that all employees are aware of the policies and rules against discrimination in the organization. A code of conduct or employee handbook should be provided by the organization. Leaders have an obligation to write, communicate and explain the anti-discrimination policies to their staff succinctly and clearly and it is better to integrate this communication with other compliance training than to just provide a printed handbook. Moreover, issues and topics should be updated often to reflect new policies and procedures, as well as how to report instances of discrimination. Plus, introducing rules, laws and policies that promote inclusion and diversity in all aspects of organization plays an essential role both in overcoming the causes of workplace discrimination and creating of an organization that values and respects individuals regardless of their nationality, gender identity or expression.

Promoting organizational core values and organizational culture: Initially, compliant employee behavior can be motivated by a core value of integrity. Hence, employees are more inclined to follow strong moral standards and a value system if their leadership embodies them and they will see the benefits of compliance and anti-discrimination training in fostering a culture of safety and support inside the workplace. However, workplace discrimination can also be prevented by embedding the core values into company culture by integrating the employees into training, performance evaluations, recognition programs, and decision-making processes.

Encouraging an atmosphere of civility, respect, and safety: It's obvious that creating a civil culture in organizations can't be accomplished overnight. But first, hiring individuals who conduct themselves with civility is very important and every employee in an organization should be able to explain the core values in addition to simply reciting them. Additionally, coaching leaders and employees on how to be civil and respectful of others also facilitates to build a more civil workplace.

Educating both employees and leaders about discrimination: Encouraging employees to be considerate of one another's differences is important and providing leaders with training on how to handle workplace prejudice will help leaders build a culture of respect to different beliefs, expressions and values in organizations. In short, leaders can be better leaders if they learn about types of unacceptable behaviors and unfair treatments in organizations and what to do best about it. Finally, informing employees of the possible outcomes of workplace discrimination, which include potential lawsuits by keeping employees informed and up to date information about the discrimination issues through face-to-face training or using visual aids in common areas to develop anti-discriminatory practices can raise the awareness of the employees on the effects of workplace discrimination.

Last but not least, taking action to tackle the root causes of discrimination, involving challenging stereotypes and uncivil behaviors that underpin workplace discrimination is hard to start but it's so essential that steps must be taken toward the prevention of discrimination in the workplace for fostering more egalitarian workplaces, otherwise it will gradually poison a safe and healthy work environment. Finally, it can be inferred that prejudice is the one of the major underlying causes of discrimination, so every individual should seek the ways of getting rid of their own prejudices and must celebrate diversity with thoughtful inclusion. Additionally, as Ros and Thoybi (2017) cited famous saying of Victor Hugo, "It is ourselves we have to fear. Prejudice is the real robber, and vice the real murderer", everyone should be respected, valued, and accepted while being their authentic selves.

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IMPORTANCE OF EMOTIONAL INTELLIGENCE AND LEADERSHIP STYLES IN PRIVATE BANKS: A STUDY OF YANGON REGION IN MYANMAR

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ABSTRACT

Purpose- This study explores the significance of emotional intelligence and various leadership styles for effective management, emphasizing their role in fostering a positive work environment and enhancing organizational success. This study is aimed to achieve two objectives. The first one is to describe the most adopted leadership style of managers in private banks and the second one is to explore the relationship between emotional intelligence and leadership styles of managers in private banks.

Methodology- A sample of 130 managers is selected as respondents from five chosen private banks in Myanmar. In this study, a two-stage random sampling method is used. Five private banks are randomly picked from a pool of 27 private banks, and 26 managers or higher staff members from each bank are also randomly selected. A systematic questionnaire is used to gather data from 130 carefully chosen respondents in total.

Findings- The results showed that the majority of managers adopted transformational leadership style and followed by participative and situational leadership. Transactional leadership style was applied as a least adopted styles by managers. Moreover, the positive correlation exists between all emotional intelligence dimensions and leadership styles and among them, the relationship between all emotional intelligence dimensions and transformational leadership styles is the most positively significant.

Conclusion- Thus, banking institutions should prioritize emotional intelligence training as a core component of their leadership development programs. By focusing on both technical and emotional intelligence, banks can build a more resilient and adaptable leadership pipeline capable of navigating the challenges of the financial sector. Additionally, emphasizing emotional intelligence in leadership can lead to a more engaged, innovative, and productive workforce, ultimately contributing to improved organizational performance and competitive advantage in the banking industry.

Keywords: Emotional ıntelligence, transformational leadership, transactional leadership, situational leadership, participative leadership
JEL Codes: D23, G21, M12

1. INTRODUCTION

The financial system of a country is a crucial factor that must be taken into account in order to improve its economy. Nowadays, the banking industry serves as the cornerstone of modern business and is comparable to the brain of the economy of a country. Every development of a country is mostly dependent on its financial system. A bank is a type of financial institution that provides a range of services to customers, companies, and government, including taking deposits, making loans, and supplying financial goods (Mishkin, 2019). The majority of firms, including those in the banking sector, aim to gain a competitive edge and function more effectively and efficiently than rivals in the same sector. In the quickly changing financial industry of today, emotional intelligence and successful leadership have become essential components for gaining a competitive edge and achieving organizational success, especially in private banks (Harms & Credé, 2010).

Emotional intelligence is one of the most prominent contemporary theories in the field of management. Various emotional intelligence concepts developed today emerged from the root philosophy of Goleman (1995), grandfather of emotional intelligence. Emotional intelligence, as defined by Goleman (1995), is the capacity to identify, comprehend, and control one's own feelings as well as those of others. Leaders in the banking sector need to understand this idea since high-stakes decisions and interactions with customers demand not only cognitive abilities but also emotional intelligence and empathy. According to author, since emotional intelligence also increase teamwork, leadership effectiveness, and decision-making and conflict-resolution skills, it is critical for organizational success. High emotional intelligence leaders are more adept at inspiring workers, creating a supportive workplace, and cultivating close bonds with coworkers, all of which increase output and

employee satisfaction at the workplace (Goleman, 1995). Besides, emotionally intelligent workers also contribute to a collaborative work culture, manage stress better, and adjust to change more readily (Cherniss, 2010).

Another crucial component of the success of an organization is leadership styles which play a pivotal role in determining how leaders in private banks guide the teams and manage challenges. According to Drucker (1996), leadership style is raising one's own performance to a higher standard, elevating others' ideas to a higher position, and developing traits beyond typical limitations. Successful leaders encourage and inspire teams, which promotes improved output and creativity. Northouse (2018) asserts that effective leadership promotes a favorable company culture, increase team cohesiveness, and raises work satisfaction levels overall. Increased organizational performance and employee engagement have also been associated with effective leadership, which emphasizes inspiring and motivating staff member (Bass & Riggio, 2006). Incorporating emotional intelligence into leadership styles aids private bank executives in navigating intricate organizational dynamics, enhancing staff happiness, and improving customer service (Harms & Credé, 2010).

Therefore, leaders with high emotional intelligence can have a big influence on organizational performance in the banking sector, where financial demands cause high levels of stress for both consumers and workers (Sy, Tram, & O'Hara, 2006). These leaders are better at resolving disputes, inspiring groups, and building trust and loyalty with both clients and staff. Therefore, it is impossible to overestimate the significance of emotional intelligence in conjunction with effective leadership in the private banking industry.

The Central Bank of Myanmar (CBM) was established as the Union Bank of Burma in 1948 and it performed as the nation's primary monetary power. In the middle of 1963 and 1990, Myanmar banking system was completely leaded by state-owned banks. In 1963, private banks had been taken into the public sector and after this, integrated by the martial government. Nowadays, 27 domestic private banks play as a main role in Myanmar's financial sector and currently, Myanmar's banking sector has changed extremely. By the reason of huge unused probable of the financial sector, banks are growing more competitive in creating their modernistic services, such as online payment system, mobile banking and other related service and applications

For maintaining existing customers and attracting new ones, many private banks in Myanmar have competed their performance by using various approaches. To become more customizable banks, all of the banks have made different sorts of innovations that advance their financial performance. But all of the banks need to consider that not to impinge on any employee's mental and psychological happiness. An excess amount and severe burden of work, inflexibility about work deadlines, longer working hours, and fear about firing of job are general problems among bank responsible persons and employees and in consequence these results have leaded to high stress level and imbalance between work and life. According to Bushra, Usman and Naveed (2011), within the periods of financial crisis, anxiety of employees about the uncertainty of work heads up their negative and defensive attitude, changes to another jobs and finally this leads to decreasing customer demand.

Furthermore, the current situation in Myanmar' private banking industry highlights how important it is to use effective leadership styles and have emotional intelligence in order to overcome the numerous challenges the industry faces. Private banks in Myanmar have been dealing with severe operational interruptions and liquidity issues as a result of the country's prolonged political and economic instability, which has been made worse by the political climate of 2021. High emotional intelligence leaders are essential in this setting for handling the elevated stress levels of staff members and climates, preserving morale, and successfully resolving conflicts. The goal of this research was, therefore, to study the effect of emotional intelligence on leadership styles as it tried to fill the mysterious dimension of leadership emotions in private bank sector. Moreover, this study leads to further leadership awareness by adding emotional intelligence as one of the dimensions that could be used by companies to recognize successful leaders.

There are seven sections in all in this research. Firstly, this paper begins with an introduction to the research topic, followed by a literature review that explores existing studies on emotional intelligence and leadership styles. The methodology section then details the research design and data collection process. Findings from the data analysis are presented next, leading to a discussion and conclusion that interpret the results. Finally, the paper offers suggestions and practical implications for managers based on the insight of study.

2. LITERATURE REVIEW

In this section, concept of emotional intelligence, competency-based emotional intelligence model, leadership style, relationship between emotional intelligence and leaderships, research objectives, research questions and research model are discussed.

2.1. Concept of Emotional Intelligence

Keeping good interpersonal communications with all of the stakeholders is crucial for every service industry because most of these industries always touch clients every day. Interrelations with all of the clients are effected by individuals' sentiment who involved in these interrelations and by those individuals' styles of behavior (Andersen & Kumar, 2006). In this situation, handling sentiment intelligently will supply a unique benefit for creating and maintaining mutually advantageous business-to-business (B2B) and business-to-customer (B2C) relationships. Thus, it is important to understand the various basic definitions about emotional intelligence in order to realize how emotional intelligence influences relationships of business in service industry. Various researchers and academic describe the word emotional intelligence with different descriptions in their paper and analysis according to their own point of view and conceptual perspective.

Emotional intelligence associated with identifying feelings, distinguishing both emotions and its associated data, and utilizing emotional data as a capability which solves the problems (Mayer & Geher, 1996). The author named John Mayer and Peter Salovey who are the pioneers of the idea of emotional intelligence have defined the word emotional intelligence as an ability to recognize and understand in order to assist thinking and assimilate and control feeling to increase personality (Salovey & Brackett, 2004). According to Bar On (2004), the word emotional intelligence is an assembling of non-cognitive aptitude, proficiency and potential that effect person's capability to achieve in managing with requirements and pressures associated with atmosphere. According to this perspective, emotional intelligence is also associated with recognizing self and others, communicating with others and managing oneself with changing atmosphere to obtain the achievement.

Emotional intelligence is described by next scholar and psychologist named Daniel Goleman, as one kind of intelligence concerned with recognizing the other people conditions and also described as individual's potential that understands and cope the emotions of own and others, controls desires and negative feelings and that keeps good social and psychological correlation aptitude efficaciously and efficiently (Goleman, 1995). The author also argued that in social communication, the individual's ability which can understand, control and utilize their emotions is also more and more vital in their everyday existence (Goleman, 2005). Furthermore, emotional intelligence is as crucial as conventional intelligence in attempting to achieve individual's professional achievement and businesses' organizational benefits (Cartwright & Pappas, 2008).

2.2. Goleman's Competency-Based Emotional Intelligence Model

In 2001, Goleman suggested four elements of emotional intelligence namely (1) self-awareness, (2) self- management, (3) social awareness and (4) relationship management or social skills which are shown in Table (1). According to author, the first element, self-awareness, mentions individual's ability to recognize own feelings. The second element, self-management, indicates individual's ability to manage the influence of negative feelings and ability to reduce the impetuous actions according to emotions. The third element, social awareness, associates with empathy and the fourth element, relationship management or social skills involves the ability to manipulate inter-personal relationship effectively.

Table 1: Goleman's Competency-based Emotional Intelligence Model

Personal Competencies		
Emotional Intelligence Elements	**Definitions**	**Emotional Attributes**
Self-awareness	Self-awareness means understanding individuals' self-feelings and self-emotions.	- Emotional self-awareness - Accurate self-assessment - Self-confidence
Self-management	Self-management means managing the inner thoughts, emotions and desires of individuals.	- Self-control - Trustworthiness - Conscientiousness - Adaptability - Achievement drive - Initiative
Social Competencies		
Emotional Intelligence Elements	**Definitions**	**Emotional Attributes**
Social Awareness	Social awareness means how individuals manipulate interactions and consciousness of other persons' feelings, emotions and desires.	- Empathy - Service orientation - Organizational awareness

Relationship Management	Relationship management associates with the adroitness at persuading desirable react in others.	- Developing others - Influence - Communication - Conflict management - Visionary leadership - Catalyzing change - Building bonds - Teamwork and collaboration

Source: Goleman's (2001) Emotional Intelligence Model

2.3. Leadership Styles

According to Eagly and Johnson (1990), leadership styles are defined as relatively constant paradigms of behavior which have appeared by leaders. Bryman (1992) suggested that leadership from style perspective where constructed behaviors of leaders described leadership style. In addition, Leadership styles can be stated that the projected behaviors of the leaders when they direct and communicate with everyone that exist in the organization (Sadeghi & Pihie, 2012).

Transformational Leadership Style - Transformational leadership style mentions to leaders who raise employees beyond their expectations (Bass & Bass, 2008). This is the active leadership style to influence the followers and to support them beyond their own interest for their group or enterprises. Transformational leaders stimulate and encourage employees via concise and understandable communication channels by fulfilling the requirements of employees effectively. Bass and Riggio (2006) proposed that transformational leadership is another version of transactional leadership, upgrading leadership to another degree.

Transactional Leadership Style - Transactional leadership style mentions to interchange correlation between leaders and assistant to obtain expectations. The interchange between them involves physical and non-physical reward and retribution. In this situation, both obtain reciprocal agreements based on targeted goals and objectives related with reward and retribution respectively (Bass & Bass 2008). From another point of view, the features of these leaders closely look like those utilize to identify managers (Kouzes & Posner, 1995).

Participative Leadership Style - Participative leadership also known as demographic leadership or organic leadership is one type of leadership style in which all the employees at various level of organization are included in decision-making process (Spreitzer, 2005). Participative leaders always value their subordinates' ideas and consider their suggestions on vital decisions. In this participative leadership style, no formal distinction has existed among leaders and followers and the leader can be viewed as a temporal supervisor for the group of like-minded people. Moreover, this type of leadership is concerned with agreement, negotiation, allocation and participation (Bass, 1981). According to Mullins (2005), the major tasks of this leadership are discussing with followers and are assessing their point of view and submissions before making final decision.

Situational Leadership Style - Intuitional leadership style is flexible form of leadership style where leaders alter their leadership style to match the present working atmosphere and the necessities of the group. This type of leadership does not rely on the leader's specific skill, but it only relies on the ability of the leader to fix the demands of a group or organization in order to be a better and more effective leader. According to (Hersey & Blanchard, 1981), this type of leader must study the condition and choose appropriate approach. The situational leadership model is an effective instrument that could assist leaders in all kinds of corporations to accomplish their objectives. It definitely focuses on the leaders' task behavior, relationship behavior and employees' the readiness degree (Hersey & Blanchard, 1984).

2.4. Relationship between Emotional Intelligence and Leadership Styles

Organizational psychology has conducted extensive research on emotional intelligence and leadership styles, with a particular emphasis on the role how emotional intelligence plays in enhancing leadership effectiveness. Leadership styles, especially transformational and transaction leadership, play a crucial role in how leaders motivate, influence and manage teams (Bass & Riggio, 2006). Numerous research has looked at the connection between emotional intelligence and the leadership styles mentioned above, offering significant insights and contributions to the specific area.

Goleman (1995) was one of the first to contend that emotional intelligence is a crucial component of leadership effectiveness, suggesting that leaders who can control own emotions, comprehend the emotion of others have a higher chance of success. The author also proposed that transformational leadership, which emphasize inspiring and motivating staff members via vision and change, requires emotional intelligence abilities including self-awareness, self-regulation, and empathy.

To differentiate between transformational and transactional leadership approaches, Bass and Avolio (1994) created the Full Range Leadership Model. The author claims that the capacity to motivate, build trust, and cultivate an emotional bond with staff members are traits of transformative leaders. The research conducted by (Harms & Credé, 2010) pointed out that the

strong correlation exists between emotional intelligence and transformational and transactional leadership styles. According to the result, these types of transformational and transaction leaders have high emotional abilities by cultivating trust with staff members, encouraging followers to achieve corporate objectives and establishing positive relationships.

According to different research by Barling, Slater, and Kelloway (2000), transformational leadership behaviors are substantially predicted by emotional intelligence. Managers are used as sample in this study, and managers with high emotional intelligence frequently display traits like intellectual stimulation, inspiring motivation, and customized concern. Additionally, this study found that the application of transformational leadership techniques was more common among those with higher emotional intelligence levels.

The study of Mandell and Pherwani (2003), which involved 32 managers, found a favorable relationship between emotional intelligence and transformational leadership style. The idea that emotionally intelligent leaders are better able to motivate change and encourage improved performance from subordinates was empirically supported by this study. Other researchers and studies supported that leaders with high emotional intelligence may adopt a transactional leadership style, which improves performance and productivity by comprehending the emotional requirements of followers (Bono & Judge, 2004).

In examining the relationship between emotional intelligence and leadership styles, it becomes evident that emotionally intelligent leaders are more inclined to adopt transformational leadership practices. Johnson and Jones (2021) highlight this tendency in digital work environments, where transformational leadership, supported by emotional intelligence, promotes adaptability and innovation. Similarly, in the healthcare sector, transactional leaders with high emotional intelligence contribute to greater employee satisfaction, as noted by Chen, Lee, and Park (2022).

Another research by Chepng'eno and Ngui (2017) measured transformational, transactional and laissez-faire leadership styles as dependent variables and examined emotional intelligence, self-awareness, self-management, social awareness, and relationship management as independent variables. The findings of this study indicated that emotional intelligence has a negative correlation with laissez-faire leadership style and positive correlation with transformational and transactional leadership styles.

Moreover, adaptive leadership during organizational change is strongly linked to emotional intelligence. Singh and Singh (2023) emphasize that emotionally intelligent leaders are not only better equipped to manage change but also more effective in helping their teams navigate transitions. For leaders in non-profit settings, emotional intelligence has been shown to enhance servant leadership effectiveness, supporting service-oriented goals and community engagement (Ahmed & Patel, 2023).

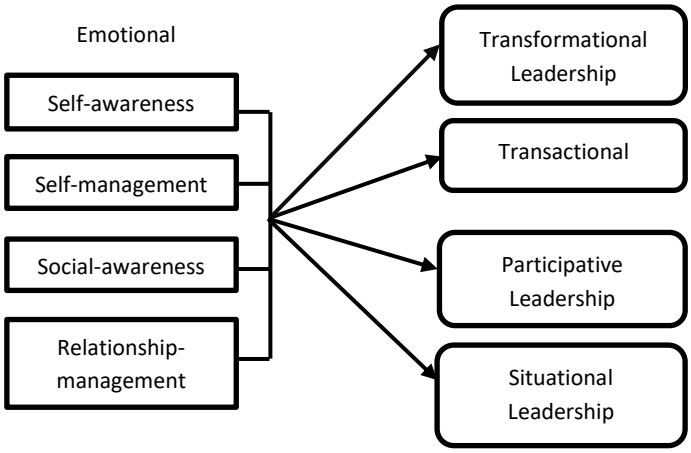
In multicultural and inclusive team contexts, emotional intelligence is critical for inclusive leadership, helping leaders to foster unity and respect among diverse team members, as demonstrated by Garcia and Hernandez (2024). These findings underline the versatile role of emotional intelligence across various leadership styles and sectors, reinforcing its value for managers aiming to improve organizational outcomes and team cohesion.

By reviewing the literature and earlier research reveals that the relationship between emotional intelligence and leadership styles has been extensively researched, especially in regard to transformational and transactional leadership. Nevertheless, little research has been done on the relationship between emotional intelligence and other leadership styles. Thus, this study aims to fill the void in the literature by addressing the relationship between emotional intelligence and various leadership styles including transformational and transactional leadership styles. The following research questions, objectives of the study and research model are then developed for this aim.

The problem of the study can be represented in the following key research questions; what kind of leadership style is the most adopted by managers in private banks? And how can emotional intelligence correlate with leadership styles of managers in private banks?

This study aims to attain the following objectives: describe the most adopted leadership style of managers in private banks and explore the relationship between emotional intelligence and leadership styles of managers in private banks

Figure 1: Research Model



3. METHODOLOGY

Two objectives are intended for this study. The first objective is to describe the most adopted leadership style of managers in private banks and the second objective is to explore the relationship between emotional intelligence and leadership styles of managers in private banks. To achieve these objectives, quantitative research approach is applied. This study also applies two-stage random sampling method in which 5 private banks are randomly chosen among 27 private banks in Myanmar and 26 managers level from each private bank are randomly collected as the respondent. The data are gathered from altogether 130 selected respondents with structured questionnaires.

The questionnaires used in this study are broken down into three. The demographic profile of managers is stated in the first section. Emotional intelligence is included in the second portion and is divided into four dimensions: self-awareness, self-management, social awareness and relationship management. Chepng'eno and Ngui (2017) constructed a set of 31 items to measure these four aspects. The third portion presents leadership style, which is divided into four styles: transformational, transactional, participative and situational styles. Another tool used to test these leadership styles is a 26-item scale that was taken from (Muchiri & Hazel, 2019). Every questionnaire used in this study has a five-point Likert scale, with 1 denoting "strongly disagree" and 5 denoting "strongly agree". Descriptive statistics are used to accomplish the first objective, while Person's Correlation analysis is also used to accomplish the second. Cronbach's α is examined to determine the reliability of the variables used in this study. Version 26 of SPSS software is utilized for the analyses.

4. FINDINGS

According to following Table (1), the majority of respondents were female (66.9%), between the age of 31 and 40 (43.8%), married persons (57.7%). The majority of the respondents are at bachelor degree (67.7%) and had between 5 and 10 (46%) years of experience.

Table 1: Demographic Profile of Respondents

Variables		*f*	Percentage (%)
Gender	Male	43	33.1
	Female	87	66.9
Age (in years)	21-30	34	26.2
	31-40	57	43.8
	41-50	35	26.9
	Over 50	4	3.1
Marital Status	Single	55	42.3
	Married	75	57.7
Education Level	Bachelor's degree	88	67.7
	Master's degree	41	31.5
	Ph.D.	1	0.8
Working Experience	Below 5 years	12	9.2
	From 5 to 10	46	35.4

	From 10 to 15	28	21.5
	Above 15 years	44	33.9

Cronbach's alpha is commonly used as a measure of overall scale reliability, with a value greater than 0.70 considered acceptable (Tian, Ge, Zhao, & Zheng, 2024). Table (2) indicates that the Cronbach's alpha value is greater than 0.7, indicating extremely strong internal accuracy and reliability for emotional intelligence dimensions and leadership styles.

Table 2: Descriptive Statistics Value and Cronbach's Alpha Value for Emotional Intelligence and Leadership Styles (N = 130)

Scale	Overall Mean	No. of Items	Cronbach's Alpha (α)	Sources
Self-awareness	4.25	8	0.72	(Chepng'eno & Ngui, 2017)
Self-management	3.90	9	0.79	
Social-awareness	3.83	9	0.82	
Relationship management	3.82	5	0.74	
Transformational leadership	4.38	7	0.85	(Muchiri & Hazel, 2019)
Transactional leadership	4.01	6	0.77	
Participative leadership	4.33	6	0.80	
Situational leadership	4.23	7	0.75	

Overall mean values for each dimension of emotional intelligence and that for each of leadership style are also presented in Table (2). The mean value is divided into three categories, according to Sekaran and Bougie (2010), with a mean score of less than 2 being considered low level, a mean score between 2 and less than 3.5 being considered moderate level, and a mean score beyond 3.5 being considered high level. Since the overall mean values for each dimension of emotional intelligence is beyond 3.5 according to the perception of respondents, all the respondents have high emotional intelligence level.

The score method of Sarrafzadeh, Martin, and Hazeri (2010) is used to determine the managers' overall perceptions related with leadership styles, and the means are as follows: 1.45–2.44 = disagree, 1.45–2.44 = strongly disagree, 2.45–3.44 = do not know, 3.45–4.44 = agree, and 4.54-5 = highly agree. As a result of Table (2), all leadership styles are existed in the agree category (3.45-4.44). Among these, transformational leadership was the most often used by the respondents as it has the highest mean score.

Table 3: Correlation between Emotional Intelligence and Leadership Styles

		TFL	TSL	PTL	STL
Self-awareness	Pearson Correlation	.537**	.402**	.415**	.430**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	130	130	130	130
Self-management	Pearson Correlation	.509**	.424**	.415**	.402**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	130	130	130	130
Social-awareness	Pearson Correlation	.540**	.470**	.457**	.354**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	130	130	130	130
Relationship management	Pearson Correlation	.627**	.554**	.527**	.471**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	130	130	130	130

TFL – Transformational leadership styles, TSL – Transactional leadership style, PTL – Participative leadership styles, STL – Situational leadership styles, ** mean $p < 0.001$

Correlation analysis was utilized to meet the second objective of this study, and the result of correlation analysis is shown in Table (3). As presented in Table (3), all the emotional intelligence dimensions are positively correlated with all leadership styles. Among them, the correlation between all emotional intelligence dimensions and transformational leadership style is the most positively significant: self-awareness ($r = 0.537$; $p < 0.000$); self-management ($r = 0.509$; $p < 0.000$); social-awareness ($r = 0.540$; $p < 0.000$) and relationship management ($r = 0.627$; $p < 0.000$). These positive correlations show that the higher respondent scored on emotional intelligence, the higher they are on transformational style.

Moreover, the relationship between emotional intelligence and the remaining leadership styles: transactional, participative and situational leaderships is positively significant. For the transactional, self-awareness ($r = 0.402$; $p < 0.000$); self-management ($r = 0.424$; $p < 0.000$); social-awareness ($r = 0.470$; $p < 0.000$) and relationship management ($r = 0.554$; $p < 0.000$). For participative leadership, self-awareness ($r = 0.415$; $p < 0.000$); self-management ($r = 0.415$; $p < 0.000$); social-

awareness (r = 0.457; p < 0.000) and relationship management (r = 0.527; p < 0.000). For situational leadership, self-awareness (r = 0.430; p < 0.000); self-management (r = 0.402; p < 0.000); social-awareness (r = 0.354; p < 0.000) and relationship management (r = 0.471; p < 0.000).

Although all dimensions of emotional intelligence are correlated with all leadership styles positively as mentioned above, among them, relationship management correlates most significantly with all leadership styles: (r = 0.627; p < 0.000; with transformational style), (r = 0.554; p < 0.000; with transactional style), (r = 0.527; p < 0.000; with participative style), (r = 0.471; p < 0.000; with situational style).

5. DISCUSSION AND CONCLUSION

This study examined the relationship between overall self-perceived emotional intelligence, and the leadership styles of managers in Myanmar private banks. The results indicate that all dimensions of emotional intelligence have acceptable, strong internal accuracy and reliability with all Cronbach's alpha values falling above 0.7. Besides, all leadership styles have an acceptable strong level of internal consistency as all Cronbach's alpha values is above 0.7. Thus, the variables used in this study have strong internal consistency and reliability.

According to the descriptive statistics, the most adopted leadership style of managers in private banks is transformational leadership style. This is the natural reason for today's banking sector as all the private banks in Myanmar face highly intensive competitive environment among each other and foreign banks located in local. This finding highlights the managers in private banks with the importance of helping others to find meaning in their works by them, instructing with clear word what others could and should do, allowing others to think about old problems in new ways and helping subordinates to feel comfortable and to improve skills and talent. The second most adopted leadership style is participative style. This result also points out that managers create the culture of listening and encouraging all subordinates' ideas and suggestions and giving a chance to voice their opinions. This culture is an important one in the current era since only the idea of top level is not enough to make effective decisions and to sustain, run, expand and compete among and with other competitors.

The finding also indicates that managers at private banks possess a high degree of emotional intelligence. This suggests that managers possess the capacity to read and comprehend their own emotions; to acknowledge the impact those emotions have on their own performance, and to identify their own strengths and weaknesses. The result on the perception of respondents on self-management and social awareness highlights that managers are also able to control feelings and behaviors in a variety of ways to get desired results and able to recognize other people's emotions around. In addition, respondents possess the skills necessary to build and maintain strong bonds with people, communicate clearly, inspire and motivate others, work well in a group and settle disputes. Thus, these findings reflect that today's working environment requests and supports more emotionally intelligence labors.

The result of correlation analysis reveals that the relationship between all emotional intelligence dimensions and transformational leadership style is the most positively significant. This result is in line with the finding of previous study conducted by Pillay, Viviers, & Mayer, (2013). This study conducted in the South African petrochemical industry reported that all of the emotional intelligence dimensions correlate significantly with transformational leadership. Besides, the findings of current study are consistent with the study of (Chepng'eno & Ngui, 2017) conducted in selected banking institutions in Kenya. Thus, this study suggests managers that naturing emotional intelligence is one of the essential components to adopt transformational leadership style effectively in Myanmar banking sector.

A positive correlation exists between all emotional intelligence dimensions and transactional leadership style as result. While the outcome of current study is consistent with the finding of (Chepng'eno & Ngui, 2017), it is not in line with the other study conducted by Pillay, Viviers, and Mayer (2013). In this study, there is no positive relationship between all emotional intelligence dimensions and transactional leadership except stress management. According to the result, one emotional intelligence dimension; stress management is negatively significant with transactional leadership.

Participative and situational leadership styles are considered in this study to match with Myanmar's socio-economic context, organizational culture, and evolving demands of the banking sector. The finding also shows that there is a positive correlation between all emotional intelligence dimensions and these two styles. Although there is some research about the relationship between emotional intelligence and leadership styles, participative and situational leadership are merely utilized as variable. Thus, this finding supports different theoretically fundamental contribution.

6. SUGGESTIONS AND PRACTICAL IMPLICATIONS

As banks navigate the complexities of a rapidly changing financial landscape, leaders equipped with high emotional intelligence can significantly enhance organizational effectiveness and employee engagement. This integration fosters a culture of empathy, collaboration, and adaptability, crucial for addressing the diverse challenges that banks face today. Based

on the research findings that demonstrate positive relationship between emotional intelligence and leadership styles, the following suggestions and practical implications are provided for Myanmar private banks.

One practical implication is that banking institutions should prioritize emotional intelligence training as a core component of their leadership development programs. By cultivating leaders who can effectively manage their own emotions and empathize with their team members, organizations can improve communication and strengthen interpersonal relationships across all levels. Leaders who exhibit high emotional intelligence can inspire trust and loyalty, leading to improved employee morale and job satisfaction. Furthermore, emotionally intelligent leaders are better at recognizing and responding to the emotional needs of their teams, which enhances motivation and fosters a more committed workforce.

Additionally, incorporating emotional intelligence assessments into the hiring and promotion processes can help organizations identify candidates who possess not only the technical skills necessary for banking roles but also the emotional competencies required for effective leadership. By focusing on both technical and emotional intelligence, banks can build a more resilient and adaptable leadership pipeline capable of navigating the challenges of the financial sector.

Finally, emphasizing emotional intelligence in leadership can lead to a more engaged, innovative, and productive workforce, ultimately contributing to improved organizational performance and competitive advantage in the banking industry.

7. LIMITATIONS AND NEEDS FOR FURTHER STUDY

While the study's conclusions contribute to the expanding body of research on leadership styles and emotional intelligence, the interpretation of the research findings is constrained by a number of issues. Due to time, money, and sample size limitations, this study is only being conducted in one location. Using self-reported data was the other drawback. Analysis of emotional intelligence in relation to other elements such as organizational commitment, employee engagement, and work satisfaction requires more research. The factors utilized in this study may also be extended to other sectors of Myanmar, including the insurance, communications, and health care sectors.

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Appendix: Variables and Items in Questionnaires

Variables	Items
Self-Awareness	I know how my feeling impact my own performance
	When I feel bad, I know exactly what or who is upsetting me
	I can understand whether I feel sad or angry or disturbed
	I am a highly motivated person
	I try to get the best possible results when I do things
	No matter what the emotional situations is, I can handle it effectively
	I know clearly my strengths and weaknesses
	I can regulate my feelings without hurting others around me

Self-Management	When I am angry or upset, I try to understand why
	I can think of many ways to get out of change in my mood
	I always practice what I advise to others
	I always stay optimistic, even if things go wrong
	I can stay calm and overcome anxiety in almost all situations
	I can receive feedback without becoming defensive
	I pay attention & listen to others without jumping to conclusion
	I always pay attention to the world around me
	I stay relaxed and composed under pressure
Social Awareness	I can read people's mind, moods, feelings and non-verbal cues
	I am usually aware of other's feeling
	I focus on people's positive qualities
	I can see things from other point of view
	I am sensitive to other people's emotions and moods
	I can sense someone's feelings even if it is unspoken by others
	I enjoy my friends, neighbors and relative a lot
	I communicate effectively in social situation
	People working with me feel that I help them in their career & work
Relationship Management	I am very skilled in handling troubled social situations to solve issues
	My understandings of others made me tol ive life happily
	My concern towards people makes them work for me
	I can choose the role that I want to have in a group
	I openly share my principle and beliefs with others
Transformational Leadership	I made others feel good to be around me
	Others have faith in me
	I instruct with clear words what we could and should do
	I help others to find meaning in their work
	I allow others to think about old problems in new ways
	I get others to think ideas that they had never questioned before
	I help subordinates to feel comfortable and to improve skills and talents
Transactional Leadership	I tell others what to do if they want to be praised
	I provide recognition when others reach their goals
	I emphasize on what others can get for what they accomplish
	I am satisfied when others meet established standards
	As long as things are working, I do not try to change anything
	I tell the standards and procedures they have to know to perform their work.
Participative Leadership	I encourage all of my subordinates to express their ideas/suggestions
	I listen to all of my subordinates' ideas and suggestions
	I use all of my subordinates' suggestions to make decisions that affect us
	I give all of my subordinates a change to voice their options
	I consider all of my subordinates' ideas when I disagree with them
	I don't make decisions that are based only on my own ideas
Situational Leadership	I rely on delegating when subordinates can do the job anda re motivated to do it
	I believe in subordinates that they do well and they need little supervision
	I involve only in decision making and problem solving but implementation is mostly in the hands of subordinates
	I guide subordinates on what to do and how to do it
	I motivate and encourage subordinates to improve confidence
	I spend time listening, advising and helping subordinates to gain necessary skills
	I provide specific guidance and close supervision to subordinates.

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CREATING A COMPREHENSIVE DATA SET FOR DECEPTION DETECTION STUDIES IN TURKISH TEXTS

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ABSTRACT

Purpose- Deception detection has gained increasing importance with the widespread use of digital communication and online platforms. While numerous studies have been conducted on deception detection in various languages, a significant gap remains in the availability of a Turkish-language dataset for detecting deceptive reviews. This study addresses this gap by creating a comprehensive dataset specifically for deception detection in Turkish hotel reviews, including real, fake, and AI-generated comments. The dataset aims to facilitate research on deception detection, enhance the reliability of user-generated content, and contribute to the development of automated methods for identifying deceptive texts.

Methodology- The study included a dataset of 5,013 Turkish hotel reviews, including real reviews from Tripadvisor, fake reviews generated by humans, and fake reviews generated by AI using the OpenAI GPT API. The collected dataset underwent extensive preprocessing to ensure quality and reliability, including data cleaning, filtering criteria, and balancing the distribution of real and fake comments. Descriptive and statistical analyses were performed to identify linguistic patterns and structural differences across these three categories. Specifically, linguistic features such as comment length, complexity, readability (measured using the Gunning Fog Index), and pronoun usage were examined.

Findings- Real comments are longer and more detailed than fake and AI-generated comments, while fake comments are simpler and clearer, which supports deception detection studies in other languages. AI-generated comments frequently use the pronoun 'we', while fake comments tend to mimic personal experience with the pronoun 'I'. In addition, the pronoun usage in real comments is more balanced and shows an authentic language structure.

Conclusion- This study makes important contributions for fake comment detection by providing the first large-scale Turkish deception detection dataset. The findings can help businesses improve the credibility of online comments. Future work could focus on machine learning applications and comparisons with different languages.

Keywords: Deception detection, Turkish dataset, text analysis, fake reviews, hotel reviews
JEL Codes: C80, M10, D83

1. INTRODUCTION

Deception is defined as the act of deliberately instilling in another individual a belief that the individual knows to be false (Ekman & O'Sullivan, 1991; Vrij et al., 2008). People admit that they are deceptive in 27% of face-to-face interactions, 21% of instant messaging, 37% of phone calls and 14% of e-mail communications (Hancock et al., 2004). As communication technologies become more prevalent in our daily interactions, the act of deception becomes easier and more common. Although deceptions are often not seen as a significant problem, some of them can lead to consequences that cannot be ignored (Viji D. & Gupta, 2022). Nowadays, as the use of the Internet increases, deceptions can harm individuals, businesses, communities, governments and public institutions both financially and emotionally. Thanks to its anonymity and accessibility, the Internet enables deceptive behaviors to be carried out more widely and effectively. Acts such as identity theft, cyberbullying, fraud and creating fake comments over the Internet can cause both money loss and psychological trauma (Patchin & Hinduja, 2010; Whitty & Buchanan, 2012). These actions not only harm people, but can also cause serious damage to businesses, such as financial losses, reputational damage and decreased customer confidence.

Internet-based deception and fraud particularly target financial institutions, e-commerce platforms, service sector companies, technology companies and small businesses. Disinformation and misinformation spread over the Internet can

polarize society and undermine general trust. Especially nowadays, when digital communication is widespread, detecting deceptions in language has become a part of strategic management processes. Strategic management involves long-term planning and decision-making processes to achieve the goals of organizations (Esmaeili, 2015). In this context, the dissemination of fake information and comments may lead to the development of misguided strategies and inefficient use of business resources. Especially customer feedback and public comments provide important data in shaping the strategic plans of organizations. However, when the accuracy of these data is not ensured, businesses may make wrong decisions and their efforts to increase customer satisfaction or gain competitive advantage may be hampered. Effective management of strategic issues such as customer satisfaction, reputation management and public perception plays an important role in helping businesses adapt to changing market conditions and remain resilient to crisis situations.

Natural language processing techniques have been widely used in deception detection studies in recent years. The most important constraint in deception detection studies is the collection of the required data. In order to detect the significant differences between deceptive and real texts, a sufficient number and quality of data is needed. Since deception detection is a very difficult and critical issue for humans, it is also difficult to collect real-life data. In the literature, many data sets have been created to be used in deception detection studies. Some of the data sets are summarized in Table 1.

Table 1: Data Sets Used in Deception Detection

Reference	Data Source	Content Type	Number of Comments	Data Set Language
Salminen, 2024	Amazon and GPT-2	Product Reviews	20000 Real 20000 Fake	English
Ott et al., 2011	Tripadvisor and Mechanical Turk	Positive Hotel Reviews	400 Real 400 Fake	English
Ott et al., 2013	Expedia, Hotels.com, Orbitz, Priceline, TripAdvisor, Yelp and Mechanical Turk	Negative Hotel Reviews	400 Real 400 Fake	English
Mukherjee et al., 2013	Yelp	Restaurant and Hotel Reviews	55025 Real 9170 Fake	English
Ignat et al., 2024	Booking	Hotel Reviews	10000 Real 10000 Fake	Turkish, Chinese, English, French, German, Italian, Korean, Romanian, Russian, Spanish
Catelli et al., 2023	TripAdvisor and Mechanical Turk	Tourist Attractions in Naples	400 Real 400 Fake	Italian
Liv d., 2014	Dianping	Restaurant Reviews	6241 Real 5957 Fake	Chinese
Hammad and El-Halees, 2013	TripAdvisor, Booking, Agoda	Hotel Reviews	2469 Real 379 Fake	Arabic
Van Dinh et al., 2022	E-commerce platforms in Vietnam	Product Reviews	14609 Real 5261 Fake	Vietnamese

As shown in Table 1, although there are datasets in languages such as English, Chinese, Arabic, Italian and Spanish there is no dataset prepared in Turkish language for deception detection in reviews about hotels, restaurants, products and locations. There are some studies that include Turkish-language comments in the dataset, but the data source in these studies is artificial intelligence, not humans. Turkish is one of the languages where artificial intelligence is most unsuccessful in generating fake comments (Ignat et al., 2024).

The main purpose of this study is to create a reliable data set for text-based deception detection studies in Turkish as well as in other languages. This study aims to increase the information reliability of strategic management processes by focusing on the detection of deception in Turkish texts and provides an important data set in this context. The study seeks to answer the following main research question: "In the context of Turkish hotel reviews, what linguistic and structural differences are observed between real, fake and AI-generated texts?" In the research process, quantitative approaches were used, focusing on how people say their reviews rather than what they say. In this context, various statistical analyses were performed on the generated data set. Linguistic features of the texts such as length, complexity and pronoun usage were quantitatively evaluated. Descriptive statistics and quantitative analysis models such as Gunning Fog Index were used in these analyses. Considering the methods used in the studies in the literature, a dataset of 5013 hotel reviews was created, including data from three different sources: real, fake and AI-generated.

This article consists of four main sections. First, the Introduction section discusses the purpose of the study, the gap in the literature, and the approach proposed to fill this gap. The second section explains the process of creating the dataset in detail, and touches on data sources, selection criteria, and data cleaning stages. The third section presents the descriptive analyses performed on the dataset, and details grammatical and structural differences. Finally, the fourth section discusses the results of the study, evaluates the contribution of the findings to the literature, and suggests future research.

2. METHODOLOGY

In order to prepare the dataset consisting of fake and real hotel reviews in Turkish, the methods followed in the "Deceptive Opinion Spam Corpus v1.4" dataset created by Ott et al. (2011, 2013), which is highly accepted in the literature and used as a reference for the preparation of many other datasets, were taken into consideration. The data collection methods in this study were not limited to the data collection methods in this study, and a data set was created by considering the different characteristics of Turkish and various expert comments. It was decided that the dataset would consist of hotel data, and in this direction, firstly, the region with the highest number of hotel reviews in Turkish was investigated. As a result of the research, the region with the highest number of hotel reviews in Turkey was determined as the Mediterranean region. Afterwards, hotels were filtered on the Tripadvisor platform as the Mediterranean region and 20 hotels with the highest number of reviews were selected. The Tripadvisor platform is open to everyone, and anyone can comment on it, and even if users sign agreements that they will not make fake reviews while registering, it is not provable that the comments published on these platforms are real comments with a hundred percent rate. Therefore, in order to increase the reliability of the dataset, a set of criteria was determined and data that did not meet these criteria were not included in the dataset.

2.1. Real Reviews Dataset

The raw data set obtained from Tripadvisor consists of 36559 reviews of 20 hotels. There are 2000 columns in the dataset, i.e. 2000 features belonging to each review. However, since not all of these features can be used in deception detection, the dataset was first simplified by selecting only the columns to be used. The current dataset includes the parameters "hotel name", "user comment", "number of times the user's comment was found useful", "number of comments the user has made so far" and "whether the user has a photo in the comment". The dataset containing real user reviews is divided into two as "Positive Real Hotel Reviews" and "Negative Real Hotel Reviews" as they will be filtered according to different criteria to increase the reliability of the data. For the dataset with positive reviews, the reviews of users who gave 4 and 5 points to the hotels were used, while for the dataset with negative reviews, the reviews of users who gave 1 and 2 points to the hotels were used.

In order to ensure that the positive hotel reviews consist of the most reliable reviews, firstly, the reviews of users with a maximum of 50 reviews and a minimum of 3 reviews were filtered. When the data set was analyzed, it was considered that some users had thousands of different hotel reviews and that these users' reviews could be fake for advertising purposes, etc. Therefore, the reviews of users with more than 50 reviews were not included in the data set. Likewise, considering the possibility of users who make 1 or 2 reviews and do not actively use the platform to fake a single hotel, the comments of these users were excluded from the dataset, as in the studies in the literature. Since it is thought to be more likely that users who add photos from the hotel to their reviews are people who have stayed at the hotel, the comments of users who commented with photos were prioritized while creating the dataset, considering other criteria. Repeated comments in the dataset were also removed as they were likely to be fake. In addition to all these, interviews were made with an authorized person who owns chain hotels in the Mediterranean region and it was learned that people such as managers, front office staff, animators, bartenders in hotels have duties to encourage customers to write fake comments in various ways and it was decided that these comments should be removed in order to increase the reliability of the dataset. Accordingly, comments containing the words "sir" and "madam" as well as some proper nouns were removed from the positive hotel reviews dataset.

For the negative reviews to consist of the comments with the highest reliability, the comments of users with a maximum of 50 and a minimum of 3 comments were taken and comments with photographs were prioritized. In addition, considering that it is a criterion that strengthens reliability for negative comments, the criterion that the comment is found useful by other users at least 2 times was taken into consideration. Comments that were not supported by other users at least 2 times as useful were removed from the data set. In addition, as in the positive data set, repetitive comments were removed.

2.2. Fake Reviews Dataset

In addition to the real comments, a fake comments dataset was also created to perform deception detection studies. There are two options for creating such a dataset. The first option is to generate fake reviews using artificial intelligence, and the second option is to ask people who have never visited the hotels to generate fake reviews about the hotels. In this study, data was generated by both methods. OpenAI GPT API was used to generate data with artificial intelligence. For real people to generate fake reviews, a Google Form was created with links to 20 hotels. People who volunteered to fill out the form were divided into two groups and one group was asked to make negative comments and the other group was asked to make

positive comments. In order to avoid repetitive comments and to keep the data quality at a high level, each person was asked to make only one comment for a hotel. People were asked to examine the hotels and make comments specific to the hotels, to avoid short comments as much as possible, to use only Turkish language in their comments, and to make completely original, non-copy-paste comments. In addition, the number of previous stays of the reviewers in a hotel was also questioned in the prepared form and the assumption was made that the reviews of people with more experience of staying in more hotels would be more reliable. Examples of the fake reviews' dataset obtained from individuals are presented in Table 2.

Table 2: Fake Hotel Reviews Dataset

Number of previous hotel vacations	Fake Hotel Reviews	Fake Hotel Reviews (Translated)
4-6 times	Otel görevlileri çok kabaydı ve hiç yardımcı olmadı. Kaldığımız 7 günlük otel planlamasının 4 gününde wi-fi sorunları mevcuttu ve teknik ekip bir türlü yardımcı olmuyordu. Ayrıca, otel plajı çok pisti sanırım bir daha buraya gelmeyeceğim.	Hotel staff were very rude and not helpful at all. There were wi-fi problems on 4 days of the 7-day hotel plan and the technical team could not help us. Also, the hotel beach was very dirty, and I think I will not come here again.
More	Belekte bir otele göre berbat. Golf sahası desem golf sahası değil halı saha desem halı saha değil cidden berbattı. Aynı zamanda aktivite yapmak için gelmiştik ama tamamı ile bir hayal kırıklığıydı. Verdiğimiz paraya asla değmedi.	Terrible for a hotel in Belek. If I say golf course, it's not a golf course, if I say astroturf, it's not an astroturf, it was really awful. At the same time, we came to do activities, but it was a complete disappointment. It was never worth the money we gave.
1-3 times	Geçen yaz arkadaşlarımla tatil için planladığımız bir oteldi ancak keşke hiç gitmemiş olsaydık. Temizlik, personel ilgisi, hijyen her şey o kadar vasat ve kötüydü ki gittiğimize çok pişman olduk. Keşke bu denli gösterişli tanıtımlar yapmak yerine biraz hijyene önem verilseydi. Odamızdaki çarşaflarda gözle görülür lekeler vardı, plajlar çöple doluydu. Bizim için çok kötü bir tecrübeydi ve kimseye tavsiye etmiyorum.	It was a hotel we planned for a holiday with my friends last summer, but I wish we had never been there. Cleanliness, staff interest, hygiene, everything was so mediocre and bad that we regretted going. I wish a little hygiene was given importance instead of making such flashy promotions. There were visible stains on the sheets in our room, the beaches were full of rubbish. It was a very bad experience for us, and I do not recommend it to anyone.
1-3 times	Balayı için tercih etmiştim. Berbat bir deneyimdi. Ücretsiz verilecek olan kahvaltıdaki ürünler bozuktu. Vadedilen ücretsiz fotoğraf kalitesi de çok kötüydü. Rakip çekebilmek adına bu tarz hinlikler yapmaya gerek var mıydı bilemiyorum. Hiç memnun kalmadım.	I preferred it for honeymoon. It was a terrible experience. The products in the free breakfast were broken. The promised free photo quality was also very bad. I don't know if there was a need to do such tricks in order to attract competitors. I was not satisfied at all.
4-6 times	Golf alanında randevu sistemiyle çalışıldığı belirtilmişti ancak randevu saatimizde alana gittiğimizde farklı bir gruba da aynı saate randevu verildiğini fark ettik ve epey kargaşa yaşadık. Ne bizim ne de diğer müşterilerin bu şekilde mağdur edilmesi kabul edilebilir bir şey değil. Bir daha gelmeyi düşünmüyorum.	It was stated that the golf area was working with an appointment system, but when we went to the area at our appointment time, we realised that a different group was given an appointment at the same time, and we had a lot of confusion. It is not acceptable that neither we are nor other customers are victimised in this way. I do not plan to come again.

Fake hotel reviews created by individuals were checked for compliance with the specified criteria, and comments that did not meet the criteria were removed from the dataset. In its final form, the dataset consists of a total of 1671 fake hotel reviews, 933 of which are positive and 738 of which are negative. In order to be balanced with the fake hotel reviews dataset, the same number of data was generated by artificial intelligence, and the final dataset was created by taking the same amount of data from the real hotel reviews dataset as the number of reviews in the fake dataset. Numerical information about the dataset is shown in Table 3.

Table 3: Number of Comments in the Data Set

Data Source	Number of Positive Comments	Number of Negative Comments
TripAdvisor	933	738
Google Forms	933	738
Artificial Intelligence	933	738

3. ANALYSIS AND FINDINGS

Many descriptive analyses are conducted on the data sets for detecting deception in the literature. The main purpose of these descriptive analyses is to identify patterns in the data sets and to investigate whether general judgments can be reached. In most of the studies, it has been found that deceptive interpretations are much more general, summarized and less detailed (Markowitz and Hancock, 2014; Louwerse et al., 2010; Ott et al., 2011; Xu et al., 2015). Based on these inferences in the literature, the length analysis of the comments in the data set was performed. The results of the analysis are shown in Table 4.

Table 4: Length of Comments in the Data Set

	Average Comment Length (Characters)	Shortest Comment Length (Characters)	Longest Comment Length (Characters)
Real Reviews	707.97	51	6226
Fake Reviews	216.44	9	1391
AI Generated Fake Reviews	103.35	73	145

When the lengths of the comments were analyzed, it was found that the real comments were much longer than the fake and artificial intelligence generated fake comments. In other words, the real comments in the generated dataset are much more detailed and detailed than the fake comments. This coincides with most of the studies in the literature and reveals that the amount of detail may have a meaning on the authenticity of the comments according to the Turkish data set. In addition to this, a cognitive load analysis was also conducted by focusing on how much mental effort is required to understand the texts. Gunning Fog Index was used for this analysis. Figure 1 expresses the Gunning Fog Index equation.

Figure 1: Gunning Fog Index

$$0.4\left(\left(\frac{Total\ Number\ of\ Words}{Total\ Number\ of\ Sentences}\right)+100\left(\frac{Complex\ Words}{Total\ Number\ of\ Words}\right)\right)$$

The results obtained from the Gunning Fog Index analysis are shown in Table 5.

Table 5: Gunning Fog Index Results

	Average Word Variety	Average Complex Word Ratio	Average Gunning Fog Index
Fake Reviews	0.834	0.123	8.78
Real Reviews	0.703	0.118	9.97
Artificial Intelligence Generated Reviews	0.841	0.171	9.16

The results show that fake comments have high word diversity, are the simplest and most easily understandable comments. Gunning Fog Index values indicate how many years of education a person can easily read and understand the text. Therefore, for a person with 8 years of education, the fake comments in the data set are readable. It has been determined that real comments are more complex and difficult to read. Real comments, which are the comments with the least word diversity, require more cognitive load than fake and AI-generated comments. It has been determined that artificial intelligence comments are slightly simpler than real comments and slightly more complex than fake comments. The highest value in terms of average word diversity was obtained in comments generated by AI. These results also support the inferences about the complexity of real comments.

One of the most controversial analyzes is the measurement of the frequency of use of personal pronouns in texts. There are many different conclusions in the literature on this issue. According to a number of studies, the frequent use of the first-person singular pronoun is a feature of deceptive interpretations that are made to mimic personal experiences (Ott et al., 2011; Lee et al., 2009; Louwerse et al., 2010; Li et al., 2014). In contrast, other studies have identified the low frequency of

use of the first-person singular as a feature of deceptive interpretations (Hancock et al., 2007; Mihalcea & Strapparava, 2009; Newman et al., 2003). In contrast, Swol et al. (2012) claimed that deceivers use a high rate of third person pronouns. According to some authors, since there are many different opinions about the use of personal pronouns, it is stated that the use of pronouns may not be a reliable indicator for detecting fake texts (Gröndahl and Asokan, 2019). Differences in language structure and cultural differences make it difficult to express the meaning of such features in a general framework. There are some limitations for conducting this analysis in Turkish. Turkish is a language where the use of hidden subjects is very common, and in this case, it is not possible to count personal pronouns with word counting tools. Therefore, the dataset was translated into English in order to perform this analysis. Another constraint is that since the real comments are longer comments, all personal pronouns will normally be used more frequently than others. In order to prevent any potential for misleading results in the analysis, the frequency of pronoun use was normalized by taking the length of the comments into account. First, the number of words in each comment was calculated. Then, the number of pronouns in a comment was determined. The pronoun frequency was calculated as expressed in Figure 2. In the next step, pronoun frequency was normalized by comment length. This allowed us to determine the average frequency of pronoun use per comment.

Figure 2: Pronoun Frequency Calculation

$$Pronoun\ Frequency = \frac{Number\ of\ Pronouns}{Comment\ Length}$$

Finally, the pronoun frequencies for each label (fake, real, AI) are averaged. The way the pronoun frequencies are averaged is expressed in Figure 3.

Figure 3: Average Pronoun Frequency Calculation

$$Average\ Pronoun\ Frequency = \frac{\sum_{i=1}^{n}\left(\frac{Number\ of\ Pronouns_i}{Comment\ Length_i}\right)}{N}$$

The results of the analysis are shown in Table 6.

Table 6: Frequency of Use of Pronouns

Label	I	you	he	she	it	we	they	me	him	her	us	them
Fake	0.02563	0.01063	0.00106	0.00007	0.02288	0.01592	0.00701	0.00244	0.00020	0.00001	0.00226	0.00095
Real	0.01692	0.01458	0.00107	0.00025	0.01775	0.01807	0.00636	0.00131	0.00033	0.00027	0.00272	0.00123
AI	0.00593	0.00000	0.00000	0.00000	0.00621	0.02676	0.00000	0.00170	0.00000	0.00000	0.00138	0.00000

It was found that "I" and "it" pronouns were used more frequently in fake reviews. This suggests that fake reviews are often written using phrases that emphasize personal experiences and talk about the general features of the hotel. People who write fake reviews may tend to emphasize personal experiences to be more convincing. Looking at the literature, even though the first-person singular is more representative of truthfulness rather than deception in most studies, there are also many studies where these results are similar. The pronouns "we", "it", "I" and "you" are the most commonly used pronouns in real comments. Real comments have a more balanced distribution. The results here are based on the desire of the real commenters to express themselves in more detail and in a variety of ways. Real reviewers talk about both their own experiences and the hotel in detail. An analysis of the frequency of pronouns used by artificial intelligence reveals that the pronoun "we" is particularly prevalent. This shows that the AI generally uses a language pattern that emphasizes group experiences when creating reviews.

4. CONCLUSION

The objective of this study is to create a dataset for the detection of deception in the Turkish language. Although there are datasets for deception detection in several languages, including English, Chinese, Arabic, Italian and Spanish, there is a lack of a comprehensive dataset in Turkish. To overcome this deficiency, a dataset containing a total of 5013 hotel reviews from three different sources was created. The dataset is completely balanced and is also divided into positive and negative reviews. While creating the data set, the study was carried out by considering the methods of the studies accepted in the literature on this subject and the special situations of the Turkish language.

The findings of this study showed remarkable similarities and differences when compared with the studies in the literature. For example, Ott et al. (2011, 2013) found that real reviews are longer and more detailed than fake reviews in English. Similarly, in this study, in the context of Turkish hotel reviews, real reviews were found to be longer than fake and AI-

generated reviews. This finding suggests that linguistic complexity and text length can be an important indicator for detecting deceptive texts, regardless of language. However, the findings of the study show some differences with the findings of Ignat et al. (2024) on AI-generated texts. Ignat et al. concluded that AI-generated fake texts are more complex and richer in diversity than real texts. According to the findings in this study, the AI-generated Turkish comments were found to be shorter and less detailed compared to the fake and real comments. This suggests that the language production capacity of artificial intelligence may differ depending on the structural features and complexity of the language.

The results show that Turkish text-based deception detection studies are feasible. Real reviews were found to be significantly longer and more detailed than fake and AI-generated fake reviews. This finding is consistent with the literature suggesting that real reviews generally contain more information and detail. The Gunning Fog Index results show that fake reviews are simpler and easier to understand, while real reviews are more complex and harder to read. This suggests that real reviews require more cognitive effort and that fake reviews often contain more superficial and generalized statements. In the pronoun usage analysis, it was found that the pronouns "I" and "he" were used more frequently in the fake reviews, while the real reviews showed a more balanced distribution of pronouns. The prominence of the pronoun "we" in AI-generated reviews indicates that these reviews generally emphasize group experiences.

In the studies conducted in Turkish, it is seen that fake news detection studies are mostly conducted in which data can be obtained more easily. However, there is a need for more diverse data sets and studies in the Turkish literature on deception detection, which has been studied with many different types of data in the literature. With this study, an important step has been taken towards providing a reliable data set for deception detection in Turkish. Compared to other studies in the literature, the most important contribution of this study is the creation of a dataset on deception detection in Turkish. While there are studies in English, Chinese, Spanish and many other languages in the literature, there is no such study in Turkish language, which makes this study unique and contributes to the literature. Moreover, the comparison of real, fake and AI-generated comments adds a new dimension to deception detection studies. In the future, it is aimed to develop more comprehensive analyzes and advanced algorithms using this dataset. In addition, cultural differences can also be revealed by comparing deception detection studies across different languages and cultures. With this dataset, it will be possible to detect deceptive statements in Turkish texts using machine learning algorithms. Thus, as in other languages, Turkish natural language processing studies will be able to make progress in the detection of deceptive statements, and it will be possible to develop the literature.

It is clear that the detection of fake reviews will provide significant benefits to the strategic management processes in the hospitality industry and other service sectors. Hospitality companies can maintain customer satisfaction and trust by preventing the negative effects of fake reviews on the brand. Identifying these comments supports businesses to achieve sustainable growth targets by improving crisis management processes. In addition, filtering fake reviews in long-term strategic planning contributes to directing resources to the right areas and helps businesses to manage cost-effectively. Fake positive reviews can mislead customer expectations and lead to marketing messages that do not match service experiences. This can lead to customer loss and negative feedback. Detection of fake negative reviews offers businesses the opportunity to protect their reputation and gain strategic advantage in times of crisis. Making strategic decisions based on real customer reviews provides businesses with an environment of transparency and trust, thus creating a positive experience for both employees and customers. Although a data set for the tourism sector was created in this study, deception detection studies have the potential to be used in strategic management and decision-making processes not only in the tourism sector but also in other service sectors.

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