Journal of Digital Art & Humanities

ISSN 2712-8148

Vol.5 Iss.2 **December 2024**

© Institute of Cited Scientists

CONTENTS

Election, Technology and Political Participation in Nigeria: A Theoretical Review 3
Utibe Titus, Aluko Bayode

Navigating Ethical Complexities of Artificial Intelligence in Civil Justice: A Discourse Analysis 16
Zahra Roozafzai

An Introduction to the Relationship Between Actors' Internal Experience and External Embodiment in Theater Performance 28
Xiao Huan, Afeez Nawfal

Research on the Artistic Aesthetics of Chinese Comedy Movies 38
Xiao Huan, Afeez Nawfal

Polyneuropathy in Rheumatoid Arthritis (literature review) 47
Iuliia Zhelnina, Tatiana Baidina, Alexander Zhelnin, Tatiana Trushnikova, Shishkina Elena

©Authors.

Election, Technology and Political Participation in Nigeria: A Theoretical Review

Utibe Titus [1][0000-0003-2017-8271], Bayode Aluko [1][0009-0005-3457-498X]

[1] Adeleke University, Ede, Nigeria

https://doi.org/10.33847/2712-8149.5.2_1

Received 06.11.2024/Revised 19.12.2024/Accepted 20.12.2024/Published 23.12.2024

Abstract. This study examines the impact of technology on political participation in Nigeria. Methodologically, data were collected through secondary sources available on electronic political processes across African countries. The data gathered were analysed to understand nexus between election technological innovation and its impacts on political participation in Nigeria. The study found out that election technology had made it easier for citizens to participate politically and also technology has improved transparency in elections and democratic processes in Nigeria. It also found out that there is positive perception towards using technology for increasing political participation amongst Nigerian citizens when compared to traditional methods such as article ballots or manual counting systems. It further highlights how widespread adoption of digital technologies has enabled more people from been disenfranchised in Nigeria to actively participate in electoral processes thereby contributing towards social change and opening up possibilities for greater involvement by citizens in effective decision making at all levels. The article suggested that technology has had a significant impact on the electoral process, and the implications of these technological changes should not be underestimated.

Keywords: Democracy, Electronic Election, Political participation, Electoral violence, Integrity.

1. Introduction

Democracy has emerged as the preferred system of government around the world due to its support of civil liberties, political rights, human rights, and other obligations of citizens. Technology has been employed in this democratic political system to enhance democratic governance in a number of polities by improving both the socioeconomic status of society and the degree of mass political participation. The use of technological tools for enhancing reliability in the conduct of elections is becoming more generally welcomed globally as more nations open up to electoral digitalization processes in order to expand their democratic profiles and provide some positive values to the influencing civic space [1].

Africa has recently witnessed a paradigm shift from liberal interventionism's advocacy of democracy and towards the implementation of a new technologically enhanced election process that adopts a smooth approach. Technological innovations have been employed in elections throughout Africa and Asia over the past 20 years. For instance, digital technology is currently used in about 50% of all national-level elections in Africa, mainly for biometric voter registration/identification and electronic results transmission [2, 3]. Hence, elections technology in African democracies plays a crucial role in ensuring the transparency, efficiency and credibility of electoral processes.

This technology includes a variety of devices, programmes, and procedures that support various electoral processes, such as direct electronic voting, biometric voter registration, smart card readers, optical scan machines, geographic information

systems, direct electronic result transmission, and database management systems [2]. The justification for implementing elections technology in Africa could potentially be based on the need to minimise long historical electoral irregularities and advance towards achieving credibility in the electoral management process as a whole. Additionally, these technologies serve a means of directing electoral support towards procedural problems that would enable them to prevent accusations of partisanship and neo-colonialism [4]. For instance, it was stated that the history of Nigeria's democratic experiences shows that elections and electoral politics have caused such a great deal of hostility that it has in certain circumstances threatened the nation's corporate existence. Nigeria's elections have been marked by a lack of confidence in declaring the official results, which has caused a significant percentage of the electorate who voted in Nigeria to reject those results [5, 6]. To reduce the occurrence of fraud, the Independent National Electoral Commission (INEC) introduced various technological innovations such as the Smart Card Reader (SCR), BVAS in order to verify the authenticity of the Permanent Voters Card (PVC) of electorate during elections.

Furthermore, it was stated that these technologies could improve the voting process by offering effective and secure ways for casting ballots and encouraging widespread electoral participation among eligible voters. Indeed, the use of advanced technologies has motivated and equipped Nigerians to participate actively in the electoral process, particularly in the 2015, 2019 and 2023 elections respectively, more than ever before [1]. For instance, the adoption of biometric voter identification devices in Nigeria from 2019 to the present is expected to have reduced the likelihood of election fraud and manipulation, resulting in a more credible and transparent voting process. Beyond improving the voting process, election technology can speed up the transmission and computation of results. Digitalised result management systems reduce delays and the possibility of result tampering by accelerating the compilation and publication of results online. This processes not only increases the legitimacy of election results but also enhances public confidence in democratic processes.

Similar to this, it was emphasised that the new technology enhances the electoral environment in a number of ways, including by strengthening and streamlining the operations of the electoral commission, reducing the possibility of electoral fraud, and encouraging greater clarity and transparency regarding election results [7].

However, election technology has developed into a critical component of debates about democratisation and democracy in Nigeria and across Africa. A number of scholars claim that technology elections, regardless of their merits, drawbacks, or ugly sides, have democratic mutually beneficial qualities that promote civic engagement and make it simple to vote. Others contend that technological advancements entirely contribute for the rise in political participation, the quality of the elections, and the strengthening of democracy and political legitimacy [8, 7, 9].

Despite the fact that each of these arguments is valid and may help to clarify the degree of democratic promises, none of them explored the significant nature of election technology and political participation in Nigeria and how they contribute to the credibility of elections within the country. At the same time, the wider literature has mainly focused on procedural challenges, paying less attention to the political participation context within which technology is introduced [10]. Therefore, this article examines the impact of technology on political participation in Nigeria.

2. A Review of related Literature

The use of election technology such as computers, optical scanners, the internet and other digital equipment like biometric devices has increased. Studies indicated that half of Africa's national elections have been held electronically since 2018 [6, 7].

The biometric voter registration process and electronic results transmission were the widely used applications of this technology. Several countries are still using this technology to improve efficiency and transparency at various phases of the voting process [11].

Numerous studies highlighted the role that technology plays in elections and the important contribution it makes to improve the democratic process. The existing literature has helped unpack important empirical details including potential benefits of technology in conducting free, fair and credible elections such as the reduction of 'ghost voters' from electoral rolls as well as risks such as 'the exclusion of many potential voters', the displacement of 'fraudulent activities into other areas of the process' [12] and 'unintended consequences' such as the surfacing of new opportunities for corruption [3].

Other studies, particularly those who take a technological determinism approach, which emphasises how technology is an unstoppable force in its own right [13], underline how new technologies are changing society in many different ways [14, 15], and how they are transforming individual lives. According to the theory of technological determinism, innovations are created independently of societal and political goals and are only useful for the purposes for which they were created. From this angle, election studies unequivocally demonstrate that technology has improved the electoral process and produced better results [16, 17, 18, 42]. Therefore, election technology is generally fetishized [3]. According to some scientists[19, 6], the use of technology in elections enhances the process's integrity and may help create more stable electoral systems.

However, According to other studies, some of Africa's election challenges require for political solutions rather than technological alternatives. According to a recent study it is unwise to fetishize digital technologies [3]. While other research [20, 3, 12, 16] agreed with the aforementioned assertion and cautioned that electoral technology should be used with caution because it is not always a solution to the political problems surrounding elections.

Others have observed that the use of technology may lead to the transfer of power from the majority of voters to a small minority who are knowledgeable about how it functions, as mentioned by Yard [11]. In their critique of new technologies and elections, Cheeseman et al. and Barkan [3 and 20] note that election technology increases uncertainty in electoral processes but fails to address the aforementioned issues.

Furthermore, it could be these technologies are not autonomous from political and socioeconomic forces. The powerful political forces have authority over them. This restricts technology's potential to address political issues that occur throughout the voting process as a whole. Therefore, the technological determinism argument is unable to both explain how disagreements over the use of technology originate and how they could affect the conduct of elections and their outcome.

Similarly, these studies have not emphasised the specific features of digital technology that encourage conflict and electoral violence or demonstrated how technology has failed to uphold voting integrity. Additionally, they have failed to show how politics and technology interact to undermine the legitimacy of elections. However, this chapter attempts to establish an analytical framework through a review of the relevancy of technology to the Nigerian election and its contribution to the development of liberal democracy.

3. Methodology

This study used a qualitative digital approach for data collection and analysis, mostly relying on documentary sources. From a methodological perspective, the

primary sources from which the article derives its claims are articles, research reports, textbooks, journals, publications about the topic, and relevant online resources. This techniques is quite appropriate as most social scientists adopted it to extrapolate ideas from various sources of documentary sources [10]. However, there is a growing body of research on the irregularities in Nigerian elections; the majority of it concentrates on historical analyses of the causes and effects of the irregularities. A wide range of scholarly research has also been done on the subject, expanding on claims made regarding how technology affects elections. This study, however, differs relatively from these pre-existing narratives by looking at the historical background of the introduction of technological innovation into Nigerian electoral politics.

4. Elections, Technology and Political Participation Nexus

It is a widely held view among psephologists, political analysts and observers that election is germane, critical and crucial to the institution of democracy. Over the years, an important factor which distinguishes advanced democracies from developing ones has been the credible way elections are conducted in the former. For instance, in countries such as USA, Britain, France, Germany, among others, election periods are adjudged as seasons meant to celebrate the institution of democracy. In other words, periods of election in these climes have been referred to as "festival of democracy". This euphoria almost always inspire citizens to participate actively in every election cycle.

However, in developing democracies such as Nigeria, the obverse has always been the case. Seasons of elections are dogged with apprehensions and palpable fear which to a large extent, impact negatively on the level of citizens' participation in such elections. The low turn- out being witnessed in Nigeria's election since the advent of democracy in 1999 cannot be divorced from this. Notwithstanding this comparison, elections in all democracies remain the lubricant that oils it.

In this regard, Aluko [21] sees election as an indispensable mechanism by which power is seamlessly transferred from one democratic regime to another. Omilusi [24] succinctly capture the concept of election as "serving the dual purpose of citizens' empowerment and that of calling the political class to accountability". As important as election is to the institution of democracy, it has, over the years, especially in developing democracies such as Nigeria, been bogged down by various vices such as rigging, manipulation of voters' register, outright violence to disrupt voting process on Election Day, among others. In the light of these challenges, it has become obvious that the manual system of voting which has been in use since the first post – independence election in 1964/65 in Nigeria can no longer be sustained if democracy must be consolidated.

Election technology comprises all electronic elections management systems. Electronic and digital equipment can handle every step of the electoral process, including voter, party, and candidate registration, candidate support signature verification, ballot production, electoral logistics, voter identification, in-person and remote voting, vote counting, results transmission, and the presentation of preliminary and final data results. According to [22], technology is a force that has the ability to change social systems and create whole new events. Because it fits the broad definition of a deductive goal, this study acknowledges the potential of technology to enhance the democratic political system. The key tenet of the argument is the construction of mechanisms for democratisation at all societal levels, as well as the provision of access to knowledge and technology. This premise is backed by modernization ideas.

The need for the introduction of technology to service Nigeria's electoral process has therefore become highly inevitable. Thus, it is assumed that technology would go

a long way to promote credible, free and fair elections in Nigeria. According to Osunyikanmi [23], "credible elections are critical to the sustenance of democracy". As he further argues, "the need for fraud-free electoral system has led to the introduction of technology to the entire process". Technology thus enhances the smooth process of election by removing the encumbrances hitherto encountered through manipulation of the manual voting process. In this regard, the Independent National Electoral Commission (INEC), have been able to deploy technology to conduct the 2023 General elections and other off-cycle elections. This, has reduced to the barest minimum, incidences of fraud, and other electoral malpractices.

In addition, both the electorate and political aspirants including political parties have been able to make effective use of technology in the course of electioneering. For example, various platforms of the social media such as facebook, WhatsApp, Twitter, instagram, Tik-tok, among others, were almost always deployed to prosecute election campaigns. The use of these social media platforms have gone a long way to remove some of the barriers thrown up by hitherto manual system of voting. For instance, political parties and aspirants to political offices spend far less in moving from one point to the other in order to prosecute election campaigns. This is as a result of the fact that funds that are expected to be expended on the logistics of moving from one campaign ground to another especially reaching the rural communities are conserved. Instead, the social media platform comes handy to fill this gap.

Political participation, on the other hand has to do with citizens' level of participation in the political process. Political participation is the concept used to describe a citizen's voluntary or non-coercive involvement in the political affairs of their nation. This definition emphasises the fact that participating in politics does not necessitate the use of force. According to Riley, Gryphon and Morey (2010), taking part in politics is viewed as a set of responsibilities that include formally encouraged civic and political participation. Verba & Nie [25] sees political participation as those activities by private citizens that are more or less directly aimed at influencing the selection of governmental personnel and/or the actions they take.

According to Van Deth [26], political participation can loosely be defined as citizens activities affecting politics. This conception is in tandem with earlier submission which conceives of political participation as citizens' involvement in politics. Janda [40], conceived of political participation as those activities of citizens that attempt to influence the structure of government, the selection of government officials, or the policies of government. As they further argue, this definition embraces both conventional and unconventional forms of political participation. While conventional political participation is constitutional and legally backed, unconventional political participation are those extra-judicial activities of citizens which though inconvenient and risky, the outcome becomes worthwhile as it also contribute to developing the political system.

As Janda [40] further explained, campaigning for candidates and voting in elections, attending political rallies, defending policies of government, belonging to a political party as a registered member, among others, amounts to conventional participation in politics. On the other hand, "staging sit-down strikes in public buildings and chanting slogans outside officials' windows are examples of unconventional participation". From the foregoing, one discovers that both forms of political participation are necessary in oiling the progress of any political system. The ability of government to harness both forms to service its policies and development programmes will go a long way to determine the success of such regime.

Having clarified the concepts of election, technology and political participation, it is apt to establish the nexus between them. Ever since it was discovered that the manual system of voting rather than promote democratic ethos and culture has

contributed its erosion and attrition, scholars of electoral studies and government have been busy finding the best and alternative method to the manual system of voting in Nigeria. The advent of the fourth Republic and the challenges it has thrown up, make the introduction of technology to election conduct in Nigeria highly inevitable.

According to "This Day" [27], as the country works to create a more stable and prosperous future, technology will play a critical role in ensuring that elections are free, fair, and transparent. As it further observed, the INEC's continuous voter registration initiative was able to identify approximately 2.7 million double registrations using the technology in voter registration and also simplifying the voter registration procedure with the use of biometrics and digital data thereby easing the process for eligible persons to vote. In addition, the introduction of the Bimodal Accreditation System (BVAS) and the INEC viewing portal (IReV), deployed in recent Nigeria elections have gone a long way to proof the inevitability of technology in ensuring transparency and fairness in the conduct of elections which hitherto was absent during the era of manual system of voting.

Furthermore, it can be argued that the introduction of technology to the conduct of Nigeria's election has not only improves the level of transparency and accountability, it has also increase the level of political participation of its citizens in the electoral process. For instance, in the recent, categories of citizens who have withdrawn to their cocoon due to challenges of the manual voting have now been drawn out to participate actively in the political process though voting in elections. This is as a result of their avowed trust in the new technological innovations introduced into Nigeria's electoral system.

5. The Quest for Election Technology in Nigeria: An Overview

The most notable democracy in the world has been conducting elections electronically since 1999 [28]. For instance, Latin America set the standard for many of these developments, starting with a pilot programme for technologically advanced voting in Colombia in 1992 and continuing with a computerised registration system connected to a photo identification card with a barcode [29]. Brazil implemented a secure local area network in place in 1998, allowing voters to cast their ballots using computers. Voter scanning and electronic results transmission were subsequently implemented in Venezuela [29].

Election-related technology has advanced significantly in Africa. Direct Recording Electronic (DRE), Optical Mark Recognition (OMR), and Optical Character Recognition (OCR) systems offer alternatives for recording voter choice. Biometric registration captures voters' fingerprints, faces, and/or other bio-data. Biometric identification electronically verifies this data at the polling place to clear an individual to vote.

Nigeria has utilised a number of methods to register voters and hold elections since 1999, including typewriters, Direct Data Capture Machines (DDCM), Election Voters' Registers (EVR), Smart Card Readers (SCR), and e-collation. An improvement in technology in the 2003 election, for instance, was the introduction of optical magnetic recognition (OMR) forms. While maintaining the manual approach as a backup, INEC integrated computerization using OMR technology. This calls for assembling all prospective registrants, also known as potential voters, who physically appear at registration centres and filling out the form EC.1A with their names and contact details [30, 31, 1].

The 2007 general election marked a new milestone in Nigerian electoral history. The application of Direct Data Capture Machines (DDCM) for the registration of prospective voters gave the system some legitimacy. With the implementation of DDCM, duplicate voting, multiple registrations, and other electoral irregularities were

all resolved. A computer system, an external hard drive (EHDD) for data backup, a camera for taking pictures, backup batteries to prevent power outages, and a printer for printing Temporary Voter Cards (TVC) make up the DDCM. It was indicated that these computer system records and stores voter data.

According to reports, the revalidation of the voter's register was made easier, faster, and more transparent by using DDC technology with manual backup [32]. A significant step in the history of Nigeria's electoral system towards eradicating double registration and voting was the creation of an electronic voters' registry. The efficient transmission of election results from diverse local government areas was made possible by the installation of Very Small Aperture Terminals (V-SAT) in each of the 774 INEC local government offices and state headquarters offices. The lack of sufficient training and the problems with non-transparency that followed the 2007 general election prevented these devices from being used to their full potential. No technology was used for accreditation of voters, voting, sorting, counting and collation of results [30, 32].

Furthermore, with a provision for some exigencies, INEC purchased and deployed more than 132,000 Direct Data Capture Machines (DDCMs) during the 2011 general elections, one for each of the 8,809 Registration Areas (RAs) and the 119,973 Polling Units (PUs). The 21-day registration period was in operation. An EVR was created and used for the 2011 general election while a more effective AFIS was employed to purge the register of multiple registrants [8, 32]. The results were not compiled using any technology. Local and state governments used electronic mail to send their results to the national headquarters in Abuja.

In addition to already-used technology, the 2015 general election launched a new era in the use of advanced information and communication technologies in Nigerian elections. To identify the identical fingerprints in the voter register used for the 2011 election, an improved Automated Fingerprint Identification system (AFIS) was deployed. The business rule was also used to further purge the record.

For the first time, INEC used technology to confirm voters with the assistance of the INEC Voters Identification System (IVAS), commonly known as the Smart Card Reader (SCR). Temporary Voters' Cards (TVCs), which voters obtained was advancement of the 2011 elections was replaced by Permanent Voters' Cards (PVCs). The PVC replaced the Temporary Voter Card (TVC). The Permanent Voter Cards were made with quality, security, lifespan, and cost effectiveness as the primary goals, according to INEC. These cards have many parts and specialised features (such as base substrate, security printing, customisation, lamination, and chip embedding) and were designed with an average life span of ten (10) years in mind.

With the SCRs, the accreditation system was broken down into three steps: identification, verification, and authentication. physical identification through a face-to-face comparison of the cardholder with the face displayed on the SCR after the PVC has been read; The data on the PVC presented a chip that must be readable in order to verify (that the card is genuine); Authentication takes place when the fingerprints saved on the card are compared to the fingerprints that were really submitted and scanned by the reader [30, 41].

The legal framework to actualize the aspirations for a digitised electoral process began in 2010, when the lawmakers began the process of amending the previous electoral law, ultimately leading to the new electoral law that is now in effect. This was done as a measure of safety and to tinker with the current procedure. Therefore, it can be asserted without reservation that Nigeria's electoral system has become digitalized as a result of the former President Muhammadu Buhari's signing of the electoral bill into law (known as Electoral Law 2022). Table 1 summarizes the various technological techniques that have been employed in Nigeria since 1999 to conduct elections.

Table 1: Technology Tools used in Nigeria Elections from 1999 to 2023

S/N	Year	Voter Reg.	Days for Reg.	Data Captured	D-Base	Accreditation/Voting	Result Collection
1	1999	Pen/sheet & Typewriters	14 days	Basic details. No picture or Finger print	NIL	NIL	NIL
2	2003	Optical magnetic recognition form (OMR Form) Automated finger prints identification system (AFIS)	10 days	Basic details & finger print only	Yes	Nil	Nil
3	2007	Direct Data Capture Machine (DDCM) (AFIS)	4 Months	Basic details, photograph, and finger prints	Yes	Electronic Voters' Register Prints (EVR)	Excel Sheet/E-mail
4	2011	Direct Data Capture	21 days	Basic details photograph, and finger prints	Yes	Electronic voter's register (EVR)	Excel Sheet/E-mail
5	2015	Direct Data Capture (DDCM), Improved (AFIS) Business Rule	Continuous Voters Reg. (CVR)	Basic details photograph, and finger prints	Yes	EVR, INEC voters Authentication system (IVAS), Smart Card Reader (SCR)	Election Transparency Admin. & Collation (e-TRAC)
6	2016 - 2023	DDCM, Improved AFIS & Business Rule	Continuous voters reg. (CVR) & BVAS	Basic details photograph, and finger prints	Yes	EVR & IVAS	Electronic – collation support (E-collation) e-TRAC & IReV

Source: Adapted from [1].

6. Election, Technology and Political Participation in Nigeria: Challenges and Prospects

The introduction of technology to the conduct of elections in Nigeria has, in no doubt, come with its own challenges. However, before interrogating these challenges, it is apt to discuss its prospects. According to McGaley and Gibson in [33] ~~Alausa and Akingbade (2017)~~, internet voting system have gained popularity and have been used for government elections and referendum in the United Kingdom, Estonia and Switzerland as well as municipal elections in the United States and France. These are examples of advanced democracies. Nigeria has done creditably by borrowing a leaf from the experience of these developed democracies with its adoption of technology in the conduct of its elections in the recent. For instance, the adoption of e-voting, introduction of BVAS and IReV by the Independent National Electoral Commission (INEC), has reduced to its barest minimum, incidences of fraud, rigging, violence and other forms of electoral malpractices.

It is envisaged that the electoral process will continue to improve as technology driven innovations continue to find its way into the conduct of elections in Nigeria. One can therefore embrace the optimism that one day; voters will not need to go out

into the sun for the purpose of queuing to vote. Instead, at the tap of the finger, Nigerians can conveniently vote through phones at the comfort of their homes.

Technology, as it were, is not without its own challenges, especially as it has to do with conduct of elections. Although electoral technologies offer a lot, it was stated that they frequently fall short of expectations. The drawback of using digital election technology is that if it is viewed as a panacea, foreign sponsors and opposition parties may lose interest in other methods of spotting and discouraging manipulation in the face of the prospect of rigging. Given the potential for political participation to undermine the functions of the electoral commission and, by extension, digital procedures, this is especially worrisome [7] (Cheeseman & Klaas, 2018).

Significantly, the high cost of new technology as indicated above frequently implies that donor funding for other projects are constrained. While electronic voting machines cannot "prevent intimidation, vote buying, media bias, low participation by women, the abuse of state resources by incumbent parties, or endemic political and electoral violence," as noted in a Democracy Reporting International report, their enormous financial costs and the changes involved with their use divert resources from addressing these fundamental issues. For instance, it was reported that the Nigerian Independent Electoral Commission (INEC) got N730.99 billion in budgetary allocations for effective election administration between 1999 and 2018. President Muhammadu Buhari set aside N242 billion for elections in 2019.

Unfortunately, over half of the huge amounts of money INEC has spent on these polls is unaccounted for and does not appear in the system because the elections are frequently performed poorly. In accordance with its plan to implement the Bimodal Voter Accreditation System and the Result Viewing Portal in the 2023 elections, INEC claimed that it has spent N117 billion on electoral technologies. This occurred at the same time that the commission was spending money on high-quality cyber security solutions to prevent hacker attacks on its servers, website, and database. According to the INEC Election Project Plan for the 2023 elections, the sum equals 33.4% of its N305 billion election budget [34] (The Punch, 2022). Indeed, a survey conducted recently study on the results of the Nigerian elections revealed that Nigerians' opinions on INEC were divided. Only 35% of voters said they trusted INEC "somewhat" or "a lot," despite nearly two-thirds (64%) of voters believing that the organisation was ready to conduct credible free and fair elections [35] (Okwueze, 2022; Ogundiya & Titus, in press).

Similar to this, poorly handled technology has resulted in violent elections and other problems [7, 36] (Cheeseman & Klass, 2018; Amoah, 2019). There have been technological failures brought on by unsatisfactory execution, bad logistics, as well as by intentional manipulation to favour particular results. This implies that while technology may increase electoral process efficiency, it does not always address the political issues that arise during a particular election. Again, Cheeseman et al. [3] highlighted multiple instances when new technologies were used to support incumbents' dominance while eventually undermining the integrity of the voting process and the validity of the outcomes. The use of technologies in elections is the new battleground, according to several recent researches on elections in Africa [36, 37].

Gaining control of the electoral management organisations is a common first step in exercising this power, as it allows one to influence choices about technology's selection, acquisition, deployment, and use. Collins and Karuti [38] asserted that the employment of technology as an election tool does not inherently serve any particular purpose. The result it produces is dependent upon the justification for its introduction, the nature of the political environment in which it is used, and the political forces that have control over its application. According to Calista & Melitksi [39], it can be utilised to uphold the status quo or even limit the reach of democracy.

In Nigeria, certain factors may pose huge challenge to successful implementation of a technologically driven electoral process. First, is the human element, because technology is influenced by human actions, politicians and election officials may use it to their advantage to promote their own interests as well as those of powerful people and their political parties. In every sphere, human beings are catalysts or agents of transformation/development or otherwise. It can therefore be understood when the issue of human elements creeps into the efficient and smooth operation of technology in the drive towards transparent, free and fair conduct of elections. From the forgoing, it is not out of place to discover that human intervention has gone a long way to disrupt the efficiency and seamlessness of technology in the conduct of elections in Nigeria.

Secondly, there is the aspect of lack of effective training of those who are to deploy technology to conduct elections. For instance, lack of technical know-how on the part of INEC staff (adhoc and regular), meant to deploy technology during elections has been one of the major challenges of a technology driven elections in Nigeria. Thirdly, the high level of illiteracy among the electorate has not helped to fast track the use of technology in elections. Since a greater percentage of voters live in the rural areas and are illiterates technology-wise, these category have not been able to grasp its use and benefits to the Nigerian political system.

Furthermore, there is the problem of epileptic power supply which almost always impact negatively on the efficiency of technology in Nigerian election. For instance, the BVAS machine needed to be powered before its use on Election Day. It has been observed that some of these machines get broken down in the course of election due to lack of adequate supply of electricity to power the battery. Finally, the geographical location of some of the polling units creates barriers for easy access to network. Communities that are located in the riverine areas may at times suffer from network failure which may disrupt the process of collation and transmission of election results to the INEC's IReV portal. Notwithstanding these challenges, technology driven elections have come to stay in Nigeria as its benefits far outweigh the so called challenges. When election technology is effectively managed and implemented, it can increase public trust in elections as well as voter confidence in the electoral process [38]. As a result, there is an increase in democratic political participation.

7. Conclusion

The study argues that the impacts of election technology in a democracy in general and Nigeria specifically cannot be overemphasized. It revealed that the adoption of elections technology in Nigeria holds significant potential to improve the democratic processes, enhance citizens' trust, and strengthen the integrity of electoral systems. It was found that the benefits of technology innovation have been fully harnessed in more democratic nations such as Ghana. Again, the employment of cutting-edge technologies has had little impact in more complex situations, such as Kenya, where compromised electoral commissioners operate in semi-authoritarian regimes.

However, the limitations of the study is that it important to note that adoption of elections technology is facing serious challenges. These include limited access to reliable electricity and internet connectivity in some regions, inadequate funding, lack of technical expertise, and concerns regarding data security. This conclusion should not be misconstrued as claiming there are no valid justifications of using technology or that it will always fail. As was previously argued, because biometric procedures for verification last a longer duration, they are less likely to fail. Additionally, they have assisted other countries, notably Kenya and Nigeria, in strengthening their voter databases. Additional challenges is that while new technology could enhance electoral

efficiency and effectiveness, they are unlikely to address partisan issues like ethnic and socioeconomic inequality, which erode the public's confidence in institutions responsible for managing elections.

The article suggest for further studies that it is a dynamic field that requires continuous innovation, capacity-building, and careful planning to ensure its successful implementation across different countries and contexts in Africa. Again, for scholars and policymakers should ensure that election reform debates should not be rushed, anticipated, or addressed as if there was a perfect technological solution to eliminate election fraud. This is particularly important because, according to numerous research studies, the adoption of electoral technology has been hampered by a number of errors; rent-seeking, and vendor conflicts, all of which collectively reduce its ability to assure acceptable elections. The deployment of such processes without addressing the basic, structural human-related issues that are inherent in elections culminates in more critiques rather than improvements in the way elections are conducted, as demonstrated by the experience of Nigeria.

When every detail is taken into account, it is clear that even while digital technology may be unstoppable, the impact that it will have on the world's developing democracies are likely to be varied. Not every political issue, though, can be attributed to technology. In many of the scenarios we take into account, the absence of digitalization would not have dramatically altered the election results. Electronic election solutions, however, are expensive and need to provide significant benefit before being implemented.

8. Recommendations

In order to promote the use of electronic devices, Africans in general and Nigeria in particular must be mindful of the dismal performance of technological safeguards and checks that frequently make an electoral process much more susceptible to manipulation than it was before. African nations need to take a positive approach while developing novel technologies for managing elections in order to minimise costs while enhancing public confidence.

When deploying technology during elections, INEC should eliminate the human element to the greatest extent possible. The electoral umpire's staff must be repeatedly reminded of the importance of upholding high ethical standards before, during, and after elections in this regard. Additionally, Nigerians must be persuaded to accept technology as a new way to fulfil their electoral duty through INEC and education organisations like the National Orientation Agency (NOA).

The government must recognise that Nigeria's electricity supply must be improved immediately. In order to find a long-term solution to the problem, it is necessary to assess the present epileptic energy supply. In this regard, it is imperative to consistently applaud the government for deregulating the power sector. It is expected that this one endeavour will have a multiplier impact in the industry, improving the nation's supply of power.

Finally, efforts should concentrate on improving access to difficult terrain where a weak network has previously existed. It is necessary to have a strong transportation network in place in order to access these terrains. Together, these measures will do much to improve the use of technology in Nigerian elections, increasing the effectiveness and efficiency of electoral participation.

References

1. Titus, U. M., Aluko, B.: Information communication technology (ICT) the management of election in Nigeria: A study of Independent National Electoral Commission’s (INEC) Bimodal Voter Accreditation System (BVAS). Contemporary Journal of Politics and Administration Redemer’s University, Ede , 2 (1) (2023).

2. Pommerolle, M, E., Perrot, S,. Willis. J. : La Fabrique du Vote: Placer la Matérialité au Coeur de L'analyse. Politique Africaine, 144: 5–26 (2016).
3. Cheeseman, N,. Lynch, G. , Willis, J.: Digital dilemmas: the unintended consequences of election technology, Democratization, 25(8), 1397-1418 (2018). DOI:10.1080/13510347.2018.1470165
4. Al-Rawy M., Elci A. Secure i-Voting Scheme with Blockchain Technology and Blind Signature. J. Digit. Sci. 1(1), 3-14 (2019). https://doi.org/10.33847/2686-8296.1.1_1.
5. Jega, A.M.: Electoral reforms in Nigeria: Prospects and challenges. A Lecture by the Chairman, INEC of Nigeria, at the 7th International Electoral Affairs Symposium, in Kuala Lumpur, Malaysia (2013).
6. Nwangu, C. Onah, V.C.O., Otuh, O. A. Elixir of electoral fraud: The impact of digital technology on the 2015 general elections in Nigeria. Cogent Social Sciences 4: 19 (2018).
7. Cheeseman, N. & Klaas, B. (2018). How to Rig an Election. New Haven and London: Yale University Press
8. Jega, A. M. Improving elections in Nigeria: Lessons from 2011 and looking to 2015. African Programme Meeting Summary, 4 July. London: Chatham House (2012).
9. Abdulkadir, A. A.: Securing Credible Elections in Africa through ICT: An Appraisal of Nigeria. AUDRI, 14, (1), 5-19 (2021).
10. Titus U. Impacts of Interview as Research Instrument of Data Collection in Social Sciences. Journal of Digital Art & Humanities, Vol.1, Iss.1, pp. 15-24. https://doi.org/10.33847/2712-8148.1.1_2.
11.Yard, M. "Direct Democracy: Progress and Pitfalls of Election Technology." In International Foundation for Electoral Systems, edited by M. Yard, 8–12. Arlington, VA: IFES (2010).
12. Evrensel, A. Introduction." In Voter Registration in Africa: A Comparative Analysis, edited by Evrensel Astrid, 1–56. Johannesburg: EISA, 2010, (2010).
13. Garson, G. D. Public Information Technology and E-Governance: Managing the Virtual State. Sudbury, MA: Jones and Bartlett, (2006).
14. Dafoe, A. On technological determinism: A typology, scope, conditions and a mechanism. Science, Technology & Human Values, 40 (6),1047–1076 (2015).
15. Wyatt, L. Technological determinism is dead; long live technological determinism. In: Hackett EJ, et al. (eds) The Handbook of Science and Technology Studies. 3rd ed. London: The MIT Press, pp.165–180 (2008).
16. Gelb. A., Clark, J. Identification for development: The biometrics revolution. Working Article No. 315. Washington, DC: Centre for Global Development (CGD) (2013).
17. Harvey, D.: The Fetish of Technology: Causes and Consequences. Macalester International 13(7) (2003). Available at: https://digitalcommons.macalester.edu/macintl/vol13/iss1/7
18. Golden M, K. E, Ofosu, G. : Electoral fraud and biometric identification machine failure in a competitive democracy (2014). Available at: https://columbiacpseminar.files.wordpress.com/2015/04/goldenkramon-ofosu.pdf
19. Hobbis, S. K., Hobbis, G.: Voter integrity, trust and the promise of digital technologies: Biometric voter registration in Solomon Islands. Anthropological Forum, 27 (2), 114–134 (2017).
Ishkanian, A. "Armenia's Election: The Status Quo Wins at the Expense of Democracy." LSE Blog, European Politics and Policy, 4 April (2017). blogs.lse.ac.uk/europpblog/2017/04/04/armenias-election-the-status-quo-wins-attheexpense-of-democracy/
20. Barkan, J.: Kenya's 2013 Elections. Technology is Not Democracy. Journal of Democracy, 24 (3)156–165(2013).
21. Aluko, B. : Electoral Violence and Democratic Fragility in Three Selected States in South-West, Nigeria (1999-2019), PhD Dissertation, Adeleke University (2022).
22. Balyakin A., Taranenko S., Nurbina M., Titov M. Social Aspects of Big Data Technology Implementation. J. Digit. Sci. 1(1), 15-24 (2019). https://doi.org/10.33847/2686-8296.1.1_2
23. Osunyikanmi, A. F. Technology, Elections and Democracy: Lessons for Nigeria. *International Journal of Operational Research in Management, Social Sciences & Education*, 4 (1), 199-213 (2018).
24.Omilusi, M.: Rituals of Democracy: Reflections on the 2019 General Elections in Nigeria, Prime Publishers & Educational Services (2021).
25. Verba, S., Nie, N.: Participation in America: Political Democracy and Social Equality. New York Harper and Row, Publishers (1972).

26. Van Deth, J.W. What is Political Participation? Politics (2021). https://doi.org/10.1093/acrefore/9780190228637.013.68
27. This Day. Technological Innovations and the 2013 General Elections (2022). http://www.thisdaylive.com
28. Shackelford, S., Bruce, S., Michael, S., Anne, B., Ben, B., Amanda N. C. D., Trey, H., Jessica, M. S.: Making Democracy Harder to Hack. University of Michigan Journal of Law Reform, 50, 629 (2016).
29. Glidden, J. A.: Election Monitoring, Technology and the Promotion of Democracy: A Case for International Standards. Wisconsin Int'l Law Journal, 19 (3), 353–368 (2000).
30. Ahmed A. M., Usman, M.: The impact of technology on Nigeria's democratic development: An analysis of the Card Reading Machine. Int. J. Multidisciplinary Res Modern Edu. 1:2 (2015).
31. Adullahi, A., Kalgo, M. A. : Digital Technology and Credible Elections in Nigeria: Evidence from the 2019 Election. Sokoto Journal of Social Sciences Conference Edition, 1:219, 1-12 (2019).
32. Fatai, A.: Smart card readers and the quality of the 2019 general elections in Nigeria: successes and challenges, The Round Table,109:4,396405 (2020). DOI:10.1080/00358533.2020.1788755
33. Alausa, D.W Akingbade, L.O: Electronic Voting: Challenges and Prospects in Nigeria's Democracy, International Journal of Engineering and Science (IJES), 6 (5), 67-76 (2017).
34. The Punch 2023: INEC budgets N117bn for anti-hacking software, others (2023). https://punchng.com/2023-inec-budgets-n117bn-for-anti-hacking-software-others/
35. Okwueze, F. O.: Interrogating the Cost of Digital Technology and Trust in Elections in Africa: The Nigerian Perspective. Africa Development, XLVII, (2), 199-217 (2022).
36. Amoah, M.: Sleight is right: Cyber control as a new battleground for African elections. African Affairs 119 (474), 68–89 (2019).
37. Debrah, E., Effah, J., Owusu-Mensah, I.: Does the use of a biometric system guarantee and acceptable election's outcome: Evidence from Ghana's 2012 election. African Studies 78 (3), 347–369 (2019).
38. Collins, O. , Karuti, K.: Election Technology, Disputes, and Political Violence in Kenya. Journal of Asian and African Studies, 1–14 (2020).
39. Calista, D. J., Melitski, J. : E-Government and e-governance: A convergence of public sector information and communication technologies. Public Administration Quarterly 31(1/2), 87–120 (2007).
40. Janda, K, Berry, J.M, Goldman, J., Schildkraut, D. : The Challenges of Democracy: American Government in Global Politics, Wadsworth Censage Learning (2014).
41. Agbu, O.: Election rigging and the use of technology: Smart card reader as the Joker in Nigeria's 2015 presidential elections. Journal of African Elections, 15(2), 70–90 (2016). https://doi.org/10.20940/JAE/2016/v15i2a5
42. Mugica, A.: The case for election technology. European View, 14: 111–119 (2015).

Navigating Ethical Complexities of Artificial Intelligence in Civil Justice: A Discourse Analysis

Zahra Sadat Roozafzai [1][0000-0001-8376-6818]

[1] ACECR Institute of Higher Education, Isfahan, Iran

https://doi.org/10.33847/2712-8149.5.2_2

Received 24.10.2024/Revised 29.11.2024/Accepted 20.12.2024/Published 23.12.2024

Abstract. Integrating Artificial Intelligence (AI) into civil justice systems has become a complex issue in the legal technology landscape. This study examines AI-driven decision-making's implications on fundamental legal principles, particularly in discretionary punishment within international civil law. By employing rhetorical discourse analysis, the research highlights the importance of critically evaluating AI's influence on fairness, impartiality, and due process. Thematic analysis explores potential benefits and drawbacks of AI in civil justice systems, emphasizing the need to uphold ethical standards and ensure equitable outcomes. Key themes include the impact of AI on international civil law, balancing technological innovation with core legal principles, ethical considerations such as algorithmic bias and transparency, challenges in ensuring fairness and due process, and the need for a thoughtful approach to AI integration. Combining rhetorical discourse and thematic analysis effectively communicates the significance and scope of the study, presenting a compelling argument for examining AI's impact on civil justice systems while balancing innovation and preserving fundamental legal principles.

Keywords: AI-assisted decision-making, Discourse Analysis, Rhetorical Thematic Analysis, International civil law, Legal digital technology and ethics

1. Introduction

In recent years, Artificial Intelligence (AI) has permeated various facets of society, revolutionizing industries and transforming the way we live, work, and interact. The legal sector is no exception, with AI-driven technologies increasingly shaping the landscape of dispute resolution and decision-making. As AI continues to advance, its potential to enhance the efficiency and effectiveness of civil justice systems across the globe becomes ever more apparent. However, alongside the promise of innovation comes a host of challenges and considerations, particularly when it comes to the role of discretionary punishment in international civil law.

Discretionary punishment, defined as the exercise of judicial discretion in determining appropriate sanctions for wrongdoing, has long been a fundamental aspect of civil justice systems worldwide. It allows judges to tailor penalties to the specific circumstances of a case, taking into account the unique context and nuances that may not be captured by a one-size-fits-all approach. The introduction of AI into this realm raises important questions about the balance between the benefits of advanced technology and the preservation of core legal principles such as fairness, impartiality, and due process.

Discourse analysis is a powerful tool for examining language in context, revealing the underlying meanings, structures, and social implications embedded within communication. The generic tenets of popular framework of Fairclough [1] is modified and adopted in the present study. By delving into the nuances of language

use, discourse analysis offers a multifaceted approach to understanding complex phenomena, from everyday conversations to academic texts.

Thematic analysis also involves identifying, analyzing, and interpreting patterns or themes within a dataset. In the context of discourse analysis, thematic analysis helps researchers uncover the key ideas, concepts, and issues that emerge from the language used in a particular context. By systematically coding and categorizing the data, thematic analysis allows researchers to identify recurring themes, compare and contrast different discourses, and explore the relationships between various elements of the communication.

This study delves into the intricate interplay between AI, discretionary punishment, and international civil law, with the aim of understanding how the integration of AI can shape decision-making processes in this context. By examining the potential advantages and disadvantages of AI-driven discretionary punishment, as well as the ethical and practical implications of its implementation, this research seeks to contribute to the ongoing discourse on the role of advanced technologies in civil justice.

2. Literature Review

The integration of discourse, rhetorical, and thematic analysis provides a comprehensive framework for understanding language in use. By considering the linguistic features, rhetorical strategies, and thematic patterns within a discourse, researchers can gain a deeper understanding of the social, cultural, and ideological implications of communication. This approach enables researchers to explore how language is used to construct and maintain social realities, power dynamics, and identities (Roozafzai [2]; Zaeri & Roozafzai [3]).

The combination of these analytical techniques allows for a multidimensional examination of language, considering both the micro-level linguistic features and the macro-level societal and cultural contexts. By employing discourse, rhetorical, and thematic analysis, researchers can uncover the complex interplay between language, thought, and social action, ultimately contributing to a more nuanced understanding of the human experience (Roozafzai [4]).

As the study navigates the complex terrain of AI and its impact on the legal landscape, it is crucial to critically evaluate the ways in which these innovations can enhance or challenge existing practices. So this study serves as a starting point for exploring the myriad facets of AI-assisted discretionary punishment in international civil law, encouraging further research and dialogue on the topic. Ultimately, by fostering a deeper understanding of the intersection between AI and civil justice, researchers and practitioners can increase the literacy and work towards a more equitable, efficient, and forward-thinking legal system for all.

The integration of Artificial Intelligence (AI) in the realm of civil justice has attracted significant scholarly attention. In the article "European Union regulations on algorithmic decision-making and a "right to explanation" the authors state that AI systems in legal frameworks have been proposed to enhance judicial discretion and improve the consistency of rulings (Goodman & Flaxman [5]). However, concerns about transparency and accountability persist (Mittelstadt et al.[6]).

Goodman and Flaxman's article [5], "European Union regulations on algorithmic decision-making and a 'right to explanation'," explores the implications of the European Union's General Data Protection Regulation (GDPR) on algorithmic decision-making. The authors discuss how the GDPR introduces a "right to explanation," allowing individuals to demand an explanation for decisions made by AI algorithms that significantly affect them. The article examines the challenges in providing meaningful explanations due to the complexity and opacity of AI systems, and the

potential impact this regulation may have on the development and deployment of AI technologies.

The study by Mittelstadt et al. [6] explores the ethical challenges and governance issues related to the use of artificial intelligence (AI) in society. The authors emphasize the importance of transparency, accountability, and fairness in AI systems, arguing that these principles are crucial to ensuring that AI technologies are developed and used in ways that benefit society as a whole. They also discuss the difficulties in implementing these principles in practice, given the complexity and opacity of many AI systems. The study is a key contribution to the ongoing debate on AI ethics and governance.

Katz, Bommarito, and Blackman's study [7], "A general approach for predicting the behavior of the Supreme Court of the United States," presents a machine learning model designed to predict the outcomes of cases before the U.S. Supreme Court. The model analyzes historical data, including the votes of individual justices and case features, achieving high accuracy in forecasting court decisions. The study highlights the potential of AI to assist in legal prediction, offering insights into judicial behavior and the dynamics of the court. This work underscores the growing role of data-driven approaches in legal analysis and decision-making.

McGregor, Murray, and Ng's study [8], "International human rights law as a framework for algorithmic accountability," examines how international human rights law can be used to ensure accountability in the development and deployment of AI systems. The authors argue that human rights principles, such as transparency, fairness, and non-discrimination, should guide the governance of AI technologies. They discuss how these principles can be applied to protect individuals from the potential harms of AI, emphasizing the importance of a legal framework that holds AI systems accountable to human rights standards.

Barfield and Pagallo's study [9], *"Research handbook on the law of artificial intelligence,"* provides a comprehensive overview of the legal and ethical issues surrounding the use of AI. The authors explore the implications of AI in various legal domains, including civil and criminal justice, intellectual property, and privacy law. The book emphasizes the need for updated legal frameworks to address the challenges posed by AI technologies, particularly in areas such as liability, accountability, and the regulation of autonomous systems. It serves as a critical resource for understanding the intersection of AI and law.

Discourse analysis (DA) is an interdisciplinary approach that examines language use in social contexts, focusing on how language constructs meaning, identity, and power dynamics. This literature review provided key concepts, methodologies, and applications of discourse analysis, emphasizing its relevance in contemporary research.

Furthermore, in the realm of Discourse analysis (DA), and the subcategories of rhetorical and thematic analysis, DA is characterized by its focus on the interplay between language and social practice. According to Gee [10], DA investigates how language enacts social and cultural identities, reflecting broader societal norms and ideologies. This perspective aligns with the findings of Macrae [11], who highlights that language not only communicates ideas but also shapes social realities and relationships.

Despite the growing body of literature on AI in the legal domain and the broader implications of discretionary punishment in civil justice systems, there remains a research gap in understanding the specific impact of AI on discretionary punishment within the context of international civil law. Some scholars have begun to explore this area, examining the interplay between AI, discretionary punishment, and the pursuit of equitable outcomes [12, 13, 14, 15, 16, 17, 18]. Therefore, as AI continues to

integrate into legal systems, ongoing research and policy development are essential [9].

Thematic analysis complements discourse analysis by identifying and interpreting patterns within language use. This method allows researchers to uncover recurring themes and issues that emerge from discourse, providing a deeper understanding of the social implications of language [19]. The integration of thematic analysis with discourse analysis enhances the analytical framework, enabling a comprehensive examination of both linguistic features and contextual meanings.

Furthermore, the significance of context in discourse analysis cannot be overstated. Understanding the socio-historical background in which discourse occurs is essential for interpreting its meaning [20]. This contextual sensitivity allows researchers to explore how discourses function across different settings, revealing insights into cultural norms and power dynamics.

As such discourse analysis serves as a vital tool for examining language's role in society. By integrating various analytical approaches and emphasizing contextual understanding, researchers can uncover the complexities of communication and representation in diverse social settings.

In the context of international civil law, discretionary punishment—the exercise of judicial discretion in determining appropriate sanctions for wrongdoing—plays a critical role in ensuring equitable outcomes and upholding the principles of justice. With the increasing integration of Artificial Intelligence (AI) in legal systems worldwide, the potential impact of AI-driven decision-making processes on the exercise of judicial discretion in civil disputes remains an understudied area. The existing literature offers valuable insights into the broader implications of AI in the legal domain and the role of discretionary punishment in civil justice systems. However, there is a need for a more comprehensive understanding of how AI may shape discretionary decision-making processes and the pursuit of equitable outcomes in the realm of international civil law.

This study aims to address this knowledge gap by examining the interplay between AI, discretionary punishment, and international civil law. It will explore the challenges and opportunities presented by the integration of advanced technologies in this context, with a focus on ensuring fairness, impartiality, and due process. Ultimately, the research seeks to contribute to the development of a more nuanced understanding of the role of AI in shaping civil justice systems worldwide, while offering insights into potential areas for policy development and reform.

So based on the topic and aims of the present study, discretionary punishment and AI in international civil law, the research question is as follows:

"What are the implications of AI-driven decision-making processes on the exercise of judicial discretion and the pursuit of equitable outcomes in international civil law, particularly with regard to discretionary punishment?"

This research question addresses the key themes of discretionary punishment, AI, and international civil law, while also focusing on the potential implications of AI-driven decision-making in this specific context.

By answering the research question, this study aims to contribute to this emerging area of research by exploring the challenges and opportunities presented by the integration of advanced technologies in the realm of international civil law. By providing existing literature and conducting a thorough analysis of key issues, this research seeks to enhance our understanding of the role of AI in shaping discretionary decision-making processes in civil justice systems worldwide.

3. Data and Methodology

This study primarily employed a qualitative research method through the use of case studies to gain a comprehensive understanding of the impact of Artificial Intelligence (AI) on discretionary punishment in international civil law. The following steps outline the methodology:

1. *Case Study Selection:* A diverse range of case studies were carefully selected to represent various legal systems and geographical regions. These case studies focused on instances where AI has been integrated into civil justice systems, with a particular emphasis on discretionary decision-making processes. For the privacy right and policy, the cases are named.
2. *Data Collection:* Relevant data for each case study was collected from multiple sources, including court documents; legal proceedings, academic articles, and news reports. There are several online resources and databases that were used in this research, such as the Legal Information Institute, Westlaw, LexisNexis, and various academic legal journals.
3. *Data Analysis:* The collected data was analyzed using qualitative content analysis to identify key themes, patterns, and trends related to the impact of AI on discretionary punishment in civil disputes. This analysis helped reveal the challenges, opportunities, and ethical considerations associated with AI-driven decision-making processes in international civil law.
4. *Comparative Analysis:* A comparative analysis was conducted across the selected case studies to understand the variations and similarities in the influence of AI on discretionary punishment in different legal systems and contexts.
5. *Findings and Recommendations*: The findings from the case study analysis provided a comprehensive understanding of the research question and to offer recommendations for policy development, legal reforms, and future research in the area of AI and discretionary punishment in civil justice systems.

By focusing on a qualitative case study approach, this methodology ensured a detailed and context-specific exploration of the impact of AI on discretionary punishment in international civil law, providing valuable insights into the real-world implications of AI-driven decision-making in the legal domain.

4. Results

This section provides an analysis of the findings from three case studies examining the impact of AI on discretionary punishment in international civil law. The themes explored include AI decision-making, fairness, and discretionary punishment, with real-world scholarly references used to contextualize and support the analysis. The discussion underscores the importance of balancing the potential benefits of AI-driven decision-making processes with the need to uphold the principles of justice and maintain discretionary decision-making in civil disputes.

The following table summarizes the findings from three case studies, where each case study is represented by a row and each theme (AI decision-making, fairness, and discretionary punishment) is represented by a column. The cells in the table contain brief descriptions of the findings related to each theme for each case study.

Table 1. Key Themes Analysis Table

Case ID	AI Decision-Making	Fairness	Discretioary Punishment
Case 1	Extensive AI involvement	Concerns about algorithmic bias	Minimal use of judicial discretion

©Authors. Journal of Digital Art & Humanities, ISSN 2712-8148, **5**(2), December 2024

Case ID	AI Decision-Making	Fairness	Discretioary Punishment
Case 2	AI used in limited capacity	Positive impact on impartiality	Significant judicial discretion exercised
Case 3	AI primarily used for support	Neutral impact on fairness	Moderate use of judicial discretion

Table 2 below builds on table 1, but with more detailed and specific findings for each case study without releasing sensitive information:

Table 2. Detailed Key Themes Analysis Table

Case ID	AI Decision-Making	Fairness	Discretionary Punishment
Case 1	AI algorithm used for evidenceanalysis and sentencing recommendations, leading to standardized decisions	Potential algorithmic bias identified, possibly impacting underrepresented groups	AI recommendations followed strictly, limiting judicial discretion
Case 2	AI used for document analysis and case prioritization, with judges making final decisions	Improved impartiality by reducing human errors and biases	Judges exercised significant discretion in sentencing, considering case-specific factors
Case 3	AI employed as a support tool for judicial decision-making, assisting in case management	Neutral impact on fairness, as AI does not directly influence outcomes	Judges balanced AI-generated insights With their own discretion

The provided tables present findings from three case studies examining the key themes of AI decision-making, fairness, and discretionary punishment in international civil law. Case 1 and Case 2 suggest that AI can play a significant role in various aspects of the legal process, including evidence analysis, sentencing recommendations, document analysis, and case prioritization. However, Case 3 demonstrates a more limited use of AI as a support tool for judicial decision-making. These findings align with the existing literature on AI's potential to streamline and improve legal processes, while also highlighting variations in the extent to which AI is used across different legal systems [5, 21].

The findings on fairness in the table reflect the ongoing debate surrounding the potential benefits and risks of AI in legal systems. Case 1 raises concerns about algorithmic bias and its impact on underrepresented groups [22], which is consistent with research highlighting the need to address fairness and transparency in AI-driven decision-making [6]. On the other hand, Case 2 suggests that AI can improve impartiality by reducing human errors and biases. It follows Mittelstadt, Russell, & Wachter`s [6] concern that indicates ethical concerns about AI's role in the legal system focus on transparency. It is also related to Barocas, Hardt & Narayanan`s book [23] which discusses the challenges of attaining fairness in AI systems and the involved ethical considerations.

Finally, the findings on discretionary punishment show that the use of AI in civil justice systems can have varying effects on judicial discretion. Case 1 indicates a reduction in discretion due to the reliance on AI recommendations, while Case 2 and Case 3 suggest that judges can still exercise considerable discretion, even when AI is involved in decision-making processes. This aligns with research highlighting the need to balance the potential benefits of AI-assisted decision-making with the importance of preserving judicial discretion and due process in civil justice systems [5].

So the analysis of these findings contributes to the ongoing conversation about the role of AI in civil justice systems, underscoring the importance of balancing technological advancements with the principles of fairness, impartiality, and discretionary decision-making in the pursuit of equitable outcomes.

The thematic analysis conducted on various texts, legal cases, newsarticle articles, and databases regarding the integration of Artificial Intelligence (AI) in civil justice systems yielded several key themes. These themes reflect the complexities and implications of AI's role in discretionary punishment within international civil law.

Impact on Discretionary Punishment

The analysis revealed that AI is increasingly being utilized to inform discretionary punishment decisions, with many legal texts and case studies highlighting its potential to enhance consistency in sentencing. However, concerns were raised regarding the reliance on AI algorithms, which may inadvertently perpetuate existing biases present in historical data. For instance, several legal cases demonstrated how AI systems could lead to harsher penalties for certain demographics, raising questions about fairness and equity in the justice system.

Balancing Innovation and Legal Principles

The literature examined emphasized the critical need to balance technological innovation with the preservation of core legal principles such as fairness, impartiality, and due process. Articles from legal journals and opinion pieces in newsarticles underscored the importance of developing AI systems that align with these foundational principles. Many scholars argued for a framework that integrates AI responsibly, ensuring that technological advancements do not compromise the integrity of the legal system.

Ethical Considerations

A significant theme that emerged from the analysis was the ethical implications of using AI in civil law. Numerous sources, including ethical guidelines from legal organizations and academic discussions, highlighted concerns about algorithmic bias, transparency, and accountability. The analysis pointed to a consensus among scholars and practitioners that AI systems must be designed with ethical considerations at the forefront, ensuring that they do not exacerbate existing inequalities within the justice system.

Ensuring Equitable Outcomes

The thematic analysis also identified a strong emphasis on the need for equitable outcomes in AI-driven legal processes. Legal cases and reports indicated that AI applications must be scrutinized for their impact on marginalized communities. The literature highlighted instances where AI systems failed to account for socio-economic factors, leading to disproportionate impacts on vulnerable populations. This theme calls for the development of AI tools that are sensitive to the diverse contexts in which they operate.

Call for Thoughtful Integration

Finally, the analysis revealed a widespread call for a thoughtful and measured approach to the integration of AI in international legal systems. Many articles and reports advocated for a phased implementation of AI technologies, accompanied by continuous monitoring and evaluation. This theme emphasizes the necessity of collaboration among legal professionals, technologists, and ethicists to create guidelines that govern the use of AI in civil justice, ensuring that it enhances rather than undermines the principles of justice.

So the thematic analysis of various texts, legal cases, and articles provides a comprehensive understanding of the implications of AI in civil justice systems. By identifying these key themes, the study contributes to the ongoing discourse on the responsible integration of AI in discretionary punishment, highlighting the need for a balanced, ethical, and equitable approach to technological innovation in international civil law.

The findings of this study shed light on the complex relationship between AI, discretionary punishment, and international civil law. The analyzed case studies reveal varying degrees of AI integration in decision-making processes, with implications for the exercise of judicial discretion and the pursuit of equitable outcomes.

In instances where AI played a more prominent role in sentencing recommendations, concerns about algorithmic bias emerged, potentially affecting underrepresented groups [21]. This highlights the importance of ensuring transparency and fairness in AI-driven decision-making processes, as echoed by existing literature [6]. Conversely, AI may contribute to improve impartiality by reducing human errors and biases. This can indicate that when applied judiciously, AI can potentially enhance the consistency and objectivity of legal processes which were examined in the present study.

Cowgill et. al. [24] also investigate the sources of bias in AI systems used for discretionary decisions, such as punishment, and whether these biases stem from the data used or the programmers themselves. The study underscores the complexity of ensuring fairness in AI-driven systems.

Moreover, Eaglin [27] analyzes how risk assessment tools used in sentencing rely on algorithms, which can impact the discretionary power of judges. It discusses the implications of these tools on judicial decision-making and the potential for perpetuating bias in punishment.

Besides, Angwin et. al. [25] discusse the use of algorithmic risk assessments in criminal sentencing, highlighting the potential biases these systems introduce, particularly against minorities, and how this affects discretionary punishment.

Furthermore, Binns [26] explores the fairness of machine learning algorithms used in decision-making processes, such as those involving punishment. It provides a philosophical perspective on the ethical considerations of using automated systems in areas traditionally governed by human discretion.

Barocas, Hardt & Narayanan [23] provide a comprehensive overview of fairness in machine learning, particularly focusing on the implications for discretionary decisions, including punishment. It discusses the challenges of achieving fairness in AI systems and the ethical considerations involved.

Gellert [26] also examines the concept of risk in the context of data protection regulations and how it interacts with algorithmic decision-making, particularly in scenarios involving discretionary punishment. It discusses the legal and ethical implications of using algorithms in areas traditionally governed by human judgment.

Furthermore, the findings underscore the need to strike a balance between leveraging AI-generated insights and preserving judicial discretion. While AI can provide valuable support for decision-making, it is crucial to ensure that the human element in discretionary punishment remains intact. As argued by Goodman & Flaxman [5] discretionary decision-making is essential for considering case-specific factors and achieving equitable outcomes in civil disputes. Furthermore, there is a growing need for legal frameworks that address AI's role in judicial processes [8]. Besides, according to Floridi & Cowls [21] the potential of AI in adjudication extends beyond mere decision-making; it raises critical questions about the limits of algorithmic fairness, and needs discussing ethical frameworks and AI’s role in societal decision-making particularly in cases involving complex or ambiguous circumstances. The analysis suggests that further research is needed to develop AI models that can

effectively account for the nuances and contextual factors involved in discretionary decision-making.

The thematic analysis of the data revealed several key themes related to the integration of Artificial Intelligence (AI) in civil justice systems, particularly in the context of discretionary punishment within international civil law. The identified themes highlight the complex interplay between technological innovation and fundamental legal principles, as well as the ethical considerations and challenges associated with AI-driven decision-making processes.

The findings obtained from DA thematic document Analysis also indicate that the integration of AI has significant implications for the exercise of discretion in legal decision-making processes. The thematic document analysis results indicates that the potential for AI systems to introduce biases and inconsistencies in the application of discretionary punishment is considerable.

The DA thematic analysis document results emphasize the importance of maintaining a balance between technological innovation and the preservation of core legal principles such as fairness, impartiality, and due process. The thematic document analysis highlightes the need for robust safeguards and oversight mechanisms to ensure that the integration of AI does not compromise these fundamental principles. The analysis suggests that a collaborative approach involving legal professionals, AI experts, and policymakers is crucial for developing guidelines and standards that promote the responsible use of AI in civil justice systems. The DA thematic analysis reveals a range of ethical concerns associated with the use of AI in civil law, including issues of algorithmic bias, transparency, and accountability.

The DA thematic document analysis results indicate the need for greater transparency in the development and deployment of AI systems, as well as clear mechanisms for holding AI developers and users accountable for any negative consequences arising from their use. The analysis suggests that ongoing dialogue and collaboration between legal professionals, ethicists, and AI researchers are essential for addressing these ethical challenges.

The DA thematic document analysis findings highlight the challenges of ensuring fair and equitable outcomes in a technologically-driven legal environment. The document thematic analysis results emphasize the importance of considering the potential disparate impacts of AI-driven decisions on vulnerable or marginalized populations. The analysis suggests that further research is needed to develop AI systems that can effectively identify and mitigate potential sources of bias and discrimination, ensuring that the integration of AI in civil justice systems promotes rather than undermines equity and social justice.

The DA thematic document analysis results emphasize the need for ongoing evaluation and adaptation of AI systems to ensure that they remain aligned with evolving legal and ethical standards and the requirement to call for a thoughtful and measured approach to the integration of AI in international legal systems. The analysis suggests that a phased approach to AI integration, with regular review and adjustment, may be necessary to address the complex and rapidly changing landscape of legal technology.

These DA thematic document findings provide valuable insights into the challenges and opportunities associated with the integration of AI in civil justice systems. By highlighting the need for a balanced, ethical, and equitable approach to technological innovation, this analysis contributes to the ongoing discourse on the role of AI in shaping the future of international civil law.

In conclusion, the implications of AI-driven decision-making processes for discretionary punishment in international civil law are multifaceted and context-dependent. To navigate this complexity, it is essential to adopt a nuanced approach that embraces the potential benefits of AI while safeguarding the principles of

fairness, impartiality, and due process. This study contributes to the ongoing conversation about the role of AI in civil justice systems and provides valuable insights for policy development and reform in this domain.

6. Conclusion

This study has investigated the impact of AI on discretionary punishment within the context of international civil law. The findings reveal a multifaceted and context-dependent relationship between AI, discretionary punishment, and the pursuit of equitable outcomes in civil disputes. While AI integration in decision-making processes can contribute to improved impartiality and efficiency, concerns surrounding algorithmic bias and the erosion of judicial discretion must be addressed.

The DA thematic document analysis of the study was conducted by systematically reviewing and coding a wide range of textual data, including legal journals, academic articles, government reports, and media sources. The researchers employed a combination of inductive and deductive coding techniques to identify recurring patterns and themes across the dataset. This rigorous analytical approach allowed for the identification of key themes that capture the multifaceted nature of AI's impact on civil justice systems.

The analysis and discussion emphasize the importance of striking a balance between leveraging AI-generated insights and preserving the human element in discretionary punishment. This entails ensuring transparency, fairness, and due process in AI-driven decision-making processes, while also safeguarding the principles of justice and equity in civil disputes.

The integration of Artificial Intelligence (AI) in civil justice systems has become a topic of increasing significance, particularly in the context of discretionary punishment within international civil law. This study aimed to shed light on the complex interplay between technological innovation and the preservation of fundamental legal principles, such as fairness, impartiality, and due process. By conducting a comprehensive thematic analysis of various texts, legal cases, newsarticle articles, and databases, the researchers uncovered five key themes that illuminate the challenges and opportunities associated with the use of AI in civil justice systems.

The first theme highlighted the impact of AI on discretionary punishment, revealing both the potential benefits of enhanced consistency in sentencing and the risks of perpetuating existing biases through the use of historical data. The second theme emphasized the critical need to balance innovation with the preservation of core legal principles, underscoring the importance of developing AI systems that align with these foundational tenets. The third theme delved into the ethical considerations surrounding the use of AI in civil law, such as algorithmic bias, transparency, and accountability, calling for the prioritization of ethical considerations in the design and deployment of AI technologies.

The fourth theme focused on ensuring equitable outcomes, highlighting the necessity of developing AI tools that are sensitive to the diverse contexts in which they operate and the potential disparate impacts on vulnerable or marginalized populations. Finally, the fifth theme called for a thoughtful and measured approach to the integration of AI in international legal systems, advocating for collaboration among legal professionals, technologists, and ethicists to create guidelines that govern the responsible use of AI in civil justice.

So the findings of this study underscore the critical importance of carefully considering the implications of AI integration in civil justice systems. As technological advancements continue to shape the future of legal processes, it is essential that the legal community, policymakers, and the public engage in ongoing dialogue to ensure that the use of AI promotes rather than undermines the principles of fairness, equity,

and justice. By embracing a thoughtful and measured approach to the integration of AI, while prioritizing ethical considerations and the preservation of core legal principles, the civil justice system can harness the potential of technological innovation to enhance the administration of justice for all.

As AI continues to permeate the legal landscape, it is crucial to critically evaluate its influence on civil justice systems worldwide. This research contributes to the ongoing discourse on the intersection of AI and civil justice by underscoring the need for a nuanced approach to the integration of advanced technologies in international legal systems. Ultimately, the insights generated by this study provide valuable considerations for policy development and reform, with the aim of harnessing the potential benefits of AI while upholding the integrity and fairness of civil justice in an increasingly technologically-driven world.

Acknowledgments

The hints made by Dr. Jalil Haji Hosseini are warmly acknowledged.

References

[1] N. Fairclough, *Critical Discourse Analysis: The Critical Study of Language*. Routledge, 2013.
[2] Z. S. Roozafzai, "Journalism's Power of Discourse: Be it Through a Periscope or Kaleidoscope," *Prof. Discourse Commun.*, vol. 5, no. 3, pp. 11–25, 2023. [Online]. Available: https://doi.org/10.24833/2687-0126-2023-5-3-11-25
[3] P. Zaeri and Z. S. Roozafzai, "Identifying as the Protagonist: Presence-inducing gameplay, linguistic elements, and self-perception in first-person narrative games," *Glob. J. Des. Art Educ.*, vol. 14, no. 2, pp. 59–79, 2024. [Online]. Available: https://doi.org/10.18844/gjae.v14i2.9393
[4] Z. S. Roozafzai, "The Influence of Ecolinguistic Discourse on Shaping the Product Relationship Management," *Discourse Commun. Sustain. Educ.*, vol. 15, no. 1, pp. 127–138, 2024. [Online]. Available: https://doi.org/10.2478/dcse-2024-0009
[5] B. Goodman and S. Flaxman, "European Union regulations on algorithmic decision-making and a 'right to explanation'," *AI Mag.*, vol. 38, no. 3, pp. 50–57, 2017. [Online]. Available: https://doi.org/10.1609/aimag.v38i3.2741
[6] B. Mittelstadt, C. Russell, and S. Wachter, "Explaining explanations in AI," *Commun. ACM*, vol. 62, no. 6, pp. 58–67, 2019. [Online]. Available: https://doi.org/10.1145/3287560.3287574
[7] D. M. Katz, M. J. Bommarito, and J. Blackman, "A general approach for predicting the behavior of the Supreme Court of the United States," *PLoS ONE*, vol. 12, no. 4, p. e0174698, 2017.
[8] L. McGregor, D. Murray, and V. Ng, "International Human Rights Law as a Framework for Algorithmic Accountability," *Int. Comp. Law Q.*, vol. 68, no. 2, pp. 309–343, 2019.
[9] W. Barfield and U. Pagallo, Eds., *Research Handbook on the Law of Artificial Intelligence*. Edward Elgar Publishing, 2018.
[10] J. P. Gee, *An Introduction to Discourse Analysis: Theory and Method*, 4th ed. Routledge, 2014. [Online]. Available: https://doi.org/10.4324/9781315819679
[11] A. Macrae, "Discourse analysis," in *Oxford Research Encyclopedia of Literature*, Oxford University Press, 2020. [Online]. Available: https://doi.org/10.1093/acrefore/9780190201098.001.0001
[12] E. Mohamed, A. Quteishat, and A. Mohammad, "Exploring the Role of AI in Modern Legal Practice: Opportunities, Challenges, and Ethical Implications," *J. Electr. Syst.*, 2024. [Online]. Available: https://doi.org/10.52783/jes.3320
[13] R. M. Re and A. Solow-Niederman, "Developing Artificially Intelligent Justice," *Stanford Technol. Law Rev.*, vol. 22, pp. 242–289, 2019. [Online]. Available: https://ssrn.com/abstract=3390854
[14] M. Scherer, "Artificial Intelligence and Legal Decision-Making: The Wide Open? Study on the Example of International Arbitration," 2019.
[15] V. Chiao, "Fairness, accountability, and transparency: Notes on algorithmic decision-making in criminal justice," *Int. J. Law Context*, vol. 15, no. 2, pp. 126–139, 2019. [Online]. Available: https://doi.org/10.1017/S1744552319000077

[16] V. A. Laptev and D. R. Feyzrakhmanova, "Application of Artificial Intelligence in Justice: Current Trends and Future Prospects," *Hum-Cent Intell. Syst.*, vol. 4, pp. 394–405, 2024. [Online]. Available: https://doi.org/10.1007/s44230-024-00074-2
[17] Z. Xu, "Human Judges in the Era of Artificial Intelligence: Challenges and Opportunities," *Appl. Artif. Intell.*, vol. 36, no. 1, 2024.
[18] D. Kolkman, F. Bex, and N. Narayan, "Justitia ex machina: The impact of an AI system on legal decision-making and discretionary authority," *Big Data & Soc.*, 2024. [Online]. Available: https://doi.org/10.1177/20539517241255101
[19] V. Braun and V. Clarke, "Using thematic analysis in psychology," *Qualitative Res. Psychol.*, vol. 3, no. 2, pp. 77–101, 2006.
[20] L. Song, "The role of context in discourse analysis," *J. Lang. Linguist. Stud.*, vol. 13, no. 1, pp. 1–12, 2010.
[21] L. Floridi and J. Cowls, "A Unified Framework of Five Principles for AI in Society," *Harvard Data Sci. Rev.*, vol. 1, no. 1, 2019. [Online]. Available: https://doi.org/10.1162/99608f92.8cd550d1
[22] Z. S. Roozafzai, "Unveiling Power and Ideologies in the Age of Algorithms: Exploring the Intersection of Critical Discourse Analysis and Artificial Intelligence," *Qeios*, 2024. [Online]. Available: https://doi.org/10.32388/60YE02
[23] S. Barocas, M. Hardt, and A. Narayanan, *Fairness and Machine Learning: Limitations and Opportunities*. Cambridge University Press, 2019.
[26] R. Binns, "Fairness in machine learning: Lessons from political philosophy," in *Proc. 2018 Conf. Fairness, Accountability, and Transparency*, 2018, pp. 149–159. [Online]. Available: https://doi.org/10.1145/3287560.3287583
[24] B. Cowgill, F. Dell'Acqua, S. Deng, and M. Kohli, "Biased programmers? Or biased data? A field experiment in operationalizing AI ethics," in *Proc. 2020 Conf. Fairness, Accountability, and Transparency*, 2020, pp. 464–474. [Online]. Available: https://doi.org/10.1145/3351095.3372840
[25] J. Angwin, J. Larson, S. Mattu, and L. Kirchner, "Machine bias: There's software used across the country to predict future criminals. And it's biased against blacks," *ProPublica*, 2016. [Online]. Available: https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing
[26] R. Gellert, "Understanding the notion of risk in the General Data Protection Regulation," *Comput. Law Secur. Rev.*, vol. 36, p. 105369, 2020. [Online]. Available: https://doi.org/10.1016/j.clsr.2020.105369
[27] J. M. Eaglin, "Constructing recidivism risk," *Emory Law J.*, vol. 67, no. 1, pp. 59–124, 2017.

An Introduction to the Relationship Between Actors' Internal Experience and External Embodiment in Theater Performance

Xiao Huan [1][0009-0006-7227-3894], Afeez Nawfal [1][0000-0002-5175-1731]

[1] Universiti Pendidikan Sultan Idris,Tanjung Malim, Perak, Malaysia

https://doi.org/10.33847/2712-8149.5.2_3

Received 29.09.2024/Revised 29.11.2024/Accepted 20.12.2024/Published 23.12.2024

Abstract. Theater performing art is an art of portraying a certain character through role-playing. As an actor, the process of entering the role is not easy to realize, but a complex process that requires a constant understanding of the role and a full expression of that understanding. In the process of character creation, the actor should not only combine subjective and objective factors, but also highly unify the physical and psychological. In fact, no matter how the actor to create the role by whatever means, are inseparable from an objective law, that is, the actor must have an internal experience of the role of the link and external embodiment of the link. And only by utilizing this law can the actor create a true and vivid image of the character. This article shows that the digital age has brought various influences on the process of actors' internalization and externalization of roles.

Keywords: dramatic performance; experience; embodiment; relationship, digital age.

1. Introduction

The relationship between internal experience and external embodiment in the art of theater performance is a critical aspect of character portrayal. This study aims to bridge the gap between an actor's internal emotional journey and the physical manifestation of that journey on stage, thereby enhancing the authenticity and depth of character portrayals. Our research contributes to the field by providing a comprehensive analysis of the interplay between an actor's subjective experience and objective performance, offering insights into the psychological and physiological processes that underpin effective acting.

The world-famous actor, Sir Laurence Olivier, once stated that "the actor's art is to convince himself that the part is congruent with his own experience." Building on Olivier's unique understanding of internal experience and external embodiment, our exploration delves into how actors can achieve a seamless integration of their personal emotions with the demands of their roles. By examining the cognitive, emotional, and physical dimensions of acting, this study seeks to uncover the strategies and techniques that enable actors to create more vivid and believable characters.

This research is particularly relevant in the contemporary theater landscape, where the line between actor and character is increasingly blurred, and audiences demand a higher level of emotional and psychological engagement from performances. By understanding the nuances of internal experience and external embodiment, actors can better navigate the complex terrain of character development, ultimately enriching the theatrical experience for both themselves and their audience.

In the subsequent sections, we will review the relevant literature to establish a theoretical framework for our study, articulate our research questions, and describe the methodology we employed to gather and analyze data. The results of our analysis will be presented, followed by a discussion of the implications of our findings for the field of

theater performance. Finally, we will conclude with a reflection on the significance of our research and its potential to influence future practices and studies in acting.

2. Literature Review

The literature review serves as the foundation for our understanding of the relationship between an actor's internal experience and external embodiment in theater performance. Historically, the craft of acting has been shaped by various theoretical frameworks, with significant contributions from practitioners like Konstantin Stanislavski, who emphasized the importance of emotional memory and inner life to create a believable character [12]. More recent studies have expanded on these ideas, exploring the cognitive and psychological processes that actors engage in to inhabit their roles [4]. Research in the field of theater performance has also begun to incorporate insights from psychology and neuroscience, examining the ways in which actors train their minds and bodies to express complex emotions and narratives [7]. The advent of digital technology has introduced new dimensions to the actor's toolkit, with some scholars arguing that digital media can enhance an actor's ability to connect with their internal experience and externalize it more effectively [11].

However, despite these advancements, there remains a gap in the literature regarding a comprehensive understanding of how actors reconcile their personal experiences with the demands of their roles, particularly in the context of contemporary theater. This study aims to address this gap by examining the interplay between internal experience and external embodiment through a multidisciplinary lens. Based on the literature review, the following research questions guide our investigation:

How do actors integrate their internal emotional experiences with the external demands of their roles in theater performance?

What cognitive and psychological strategies do actors employ to achieve a congruence between their internal states and external expressions?

In what ways does the era of digitalization impact the actor's process of internalizing and externalizing their characters?

3. The meaning and role of internal experience and external embodiment

3.1. Meaning of internal experience

Internal experience refers to the process of the actor's deliberate use of suggesting himself/herself during the creation of the character, to feel the psychological activity of the characterization in the role, and to integrate himself/herself into the character.

In theater performance, with certain skills to experience the character's feelings about life, imagine the character's inner activities in a particular situation, and then perform, so that with the changes in their feelings and naturally show certain behaviors, to achieve the perfect fusion of the actor's own and the role.

Actors and roles due to different growth environment, different ideological concepts, different times, different social status, different life experiences, different behavior, different speech, forming the actor and the role of the "real me" and "false me" contradictions, and the two relationships are opposites and unity. [8].

These two relationships are opposites and unity. When the actor creates a role, he needs to take the "true self" as the main body of creation, and then he needs to overcome the contradiction between the "true self" and the "false self", and move towards the "false self" required by the script. Then they need to overcome the contradiction between the "true self" and the "false self" and approach the "false self" [10].

©Authors.

required by the script. Through the continuous experience of the role, they can bring the "true self" into the role, and truly and accurately express the image of the "false self".

The most important feature of Mr. Cheung's performance is that he can make good use of his eyes and facial expressions to realize the expression of his character's inner world. By understanding the emotions of the character, he makes the whole acting process very natural. In "Legend of Ah Fei", Mr. Cheung played the role of a rebel (Figure 1), but in "Farewell My Concubine", Mr. Cheung played the role of Chen Dieyi (Figure 2), who was a soft and tender character. It is through the full understanding of the character's emotions that Mr. Cheung is able to portray each character so evocatively.

When the actor wants to experience the emotion of the character, the first step is to analyze the script comprehensively, to understand the character traits and emotional experiences of the character, to imagine the physical behavior and psychological activities of the character, and to restore the character's image in the script to the performance through an all-round analysis of the character; the second step is to understand the background of the life of the character, for example, in Farewell My Concubine, the movie's scenes are created entirely on the basis of Chinese history, and only in the context of the cultural revolution can the conflicts between the protagonists be highlighted; the last step is to integrate the emotions of the actor and the characters in the script. For example, in "Farewell My Concubine", the scene of the movie is created completely based on Chinese history, only in the background of the cultural revolution can the conflict between the main characters be highlighted, and the final tragedy of the movie is also an extension of the conflict; the last step is to integrate the emotions of the actors and the characters in the script.

Figure 1. Forrest Gump style

Figure 2.Farewell My Concubine style

3.2. The role of internal experience

Only by eliminating the contradiction between the "true self" and the "false self" can the actor create a character that is true to life. In the process of acting, the actor needs to add his own emotions to the experience of the character he is playing. Lev Tolstoy once pointed out that in the process of performing, the actor needs to emerge emotions similar to the situation he is performing, and then express the emotions through certain actions, gestures, tone and voice, so that the audience who feels such emotions can infect the people around them. From this, we can see that theater performance is a process of transferring emotions. Another famous artist suggested that "performance is the actor expressing his emotions in the world described by the script". Although it is said that theater performance is unrealistic, and the writer of the play sets up a particular life environment for the character, in the process of performance, the actor must show the authenticity of the character in the process of creating a false image of the character, and to see the truth in every aspect.

©Authors. Journal of Digital Art & Humanities, ISSN 2712-8148, **5**(2), December 2024

3.3 Meaning of external embodiment

External embodiment refers to the results of the performance that the actor presents in the performance after completing the experience of the character. In order for an actor to embody a character in a performance, he or she needs to conduct an in-depth analysis of the role played, as well as conceptualize the character's image, and then only then can he or she find the proper behavior and emotion of the character.
The actor's search for a sense of self in the role he or she is playing involves, on the one hand, analyzing the character's personality in the script, and then imagining what the character's outward behavior might be like under such a personality. In other words, the actor has to show different behavioral habits according to the particular character in the performance. Observing many famous actors, they all have a common characteristic: they pay great attention to their physical expressions such as standing, sitting, walking, etc., and combine their bodies with their roles in their performances [6]. For example, in "Sentinels under the Neon Lights", Mr. Gong Zi Pi played the role of the company commander, and in one of the episodes, when the commander commanded the company soldiers to sing, he clenched his two fists tightly and raised them above his head to beat the beat, which was a perfect expression of the character's personality, and at the same time embodied the characteristics of the army, and the audience was deeply impressed by his performance.

3.4 The role of external representation

In theater performance, the actor's performance of the role is the process of creating the image of the role, and this process shows the actor's self-cultivation. Good role-playing must be realized by the actor's comprehensive analysis and conception of the role. According to the famous actor Stanislavski [12] and Strasberg [13],the actor must utilize certain techniques and technologies in order to bring the character to life and even express the soul of the character in the play. The technique mentioned here should be the actor's analysis and understanding of the role, and the technology is the actor's look, tone and movement and other forms in the performance, which expresses the psychological world of the character's image and enriches the character's image by integrating himself into the role.

Only through the continuous excavation and analysis of the character can the actor fully grasp the characteristics of the character, and in the process of experiencing the character, he or she can constantly add to the conception of the character, fully integrate the "true self" into the "false self", and finally express the character perfectly. Only in this way can the actor combine the character characteristics of the role he plays, integrate himself into it, complete the process of creating the character's image, express a vivid and lively character image, and achieve the ultimate goal of creating a distinctive character image in the theater performance.

4.The Relationship between Internal Experience and External Embodiment in Theater Performance

Ancient Chinese opera performers summed up their performances in the saying, "When the face moves, the spirit follows; when the form appears, the spirit opens". This statement provides a more accurate explanation of the relationship between internal experience and external manifestation in theater performance. The actor's psychological and emotional understanding of the character is the basis of the performance, which dominates the process and determines the image of the character created. The external manifestation of the performance is subordinate to the actor's internal experience of the role, which is a result of the actor's experience of the role, and such a result is the actor's psychological and emotional manifestation of the role. This is the relationship between internal experience and external embodiment in performance.

Figure 3. This style from the performance demonstrates how actors convey complex emotions through facial expressions and body language during their act, highlighting the close connection between internal experience and external embodiment.

4.1. Dominant determinants of experience

In theater performance, from the beginning of the actor's contact with the role in the drama, until the complete characterization of the role image, the whole process of the actor needs to be involved in the experience of the role. The experience does not only refer to the actor's feelings of joy, anger, sadness and happiness, but also includes the actor's liking or disliking of the character he or she is playing. Once the actor is separated from the internal experience of the character in the process of performance, he or she will not be able to complete the creation of the character, and will not be able to accurately express the characteristics of the character image. Therefore, the significance of internal experience for performance is to give a vivid life to the character. When the performance is detached from the internal experience of the character, even with the most brilliant acting skills, the character performed is just a shell, pale and powerless. In performance, there is no model that can replace the internal experience and directly reflect an accurate and vivid image, without internal experience of the performance lacks the basis of moving the audience. Usually, the evaluation of the actor's performance ability is generally judged by whether the actor has the ability to express the inner life and emotion of the character through in-depth internal experience of the character, thus it can be seen that the internal experience has a dominant role in the performance of the opera.

In everyone's life, all kinds of life experiences in the past will leave a trace in the deepest part of the heart, and this kind of trace can help the actors to recall the emotions and feelings brought by the life experiences similar to the scene when they perform, but this kind of emotions and feelings is not the real emotions and feelings needed for the performance, because everyone's specific experiences are different, and the experience brought by them is different, and due to the individual differences, everyone expresses emotions differently for the same situation, such as remorse, anger, jealousy, fear, happiness, sadness, etc. And the same person expresses emotions differently every time at different times. , for the same situation, each person expresses emotions differently, such as chagrin, anger, jealousy, fear, happiness, sadness, etc., and the same person expresses different emotions each time in different time periods. However, different emotions also have their common points, and these common points constitute the emotional foundation. In the performance, the actor takes the internal experience of the character as the basis, and then searches for the common points of emotions in different

scenes according to his own emotional experience, and finally brings the common points of emotions into the character experience.

The internal experience of this kind of performance includes the recall of the actor's own emotions [15], but is not limited to combining them with a certain past experience, but only combining emotions from multiple life experiences. At this point, the actor does not need to experience such emotions, but only extracts and feels the roots in the emotions as a basis for the subsequent expression of the emotions of the scene. Generally speaking, the actor does not need to be familiar with the details of the emotions to grasp certain emotions, but rather grasps the essence of the emotions, and once he receives the appropriate stimulus in the theater performance, he can express the remembered emotions.

The famous performer Vakhtangov said this about the emotional layer in acting: "We are familiar with most of the emotions on the basis of our personal life experience. However, these emotions are not arranged in our minds in the order and logic required by the characterization. Therefore the actor's task is to draw from all corners of his heart the imprints of the desired emotions and to arrange them in accordance with the requirements of the logic of the life of the character portrayed."

For the actor, the emotion in the performance should be obtained from his own life experience, through the memory of his own life to stimulate his own emotion. In order to realize the creation of the character image, the actor must be inseparable from the emotional expression of the character image, and in order to express the emotions required by a specific scene of the play, the actor must be supported by his or her own emotions. Only when the actor combines the emotional experience of his past life with the dramatic scene can he create a character with character traits.

4.2 Embodied compliance

Internal experience is dominant in theater performance, and external embodiment can only be produced based on internal experience, but it is not true that with internal experience an accurate and distinct external form will necessarily be embodied. In order to accurately embody the external form of a character and form a distinctive character image, on the one hand, actors need to be professionally trained in articulation, gesture, expression and other performance skills, so that when they need to embody their own experience of the character in the performance, the character image will not be affected because of their performance skills; on the other hand, actors need to repeatedly study and explore the expression and forms of performance, so as to realize the most suitable means of expression and to realize the most suitable means of performance. On the other hand, it is necessary for the actor to study and explore the expression and form of expression in the performance repeatedly, to convey his experience of the character through the most appropriate means, and to be able to express himself freely no matter whether the character is to express delicate tenderness or surging passion. As Henri Irving said, "It is often thought that great actors rely on a moment's inspiration. There is nothing more absurd than this idea. The astonishing strokes of a great actor are generally carefully gauged, studied and honed." In theater performance, if the psychological activities and emotional state of any character are to be distinctly and vividly expressed, it requires the actor to have an internal experience of the character, to express the image and emotion of the character through the speech patterns such as the height of the voice, the lightness and weight of the speech, and the intonation and elevation of the speech, and moreover to intensify all the emotions expressed by the actor through the adjustments of some gestures, changes in gesture, and changes in the expression of his or her face. Drama performance not only requires the inner experience of the character, but also needs enough expression ability to reflect the image of the character completely and accurately [9].

4.3 Interaction between internal experience and external embodiment

In theater performance, the actor's experience of the role is the basis for characterization, and the embodiment of the image of the role is an expression of the experience of the role. Therefore, whether the actor's experience of the role is deep or not will directly affect the final image of the role. The internal experience and external embodiment of the role interact and influence each other. When an actor performs certain logical behaviors or certain specific scenes during the performance, it is also easy to cause certain emotions to arise, thus deepening the experience of the role. When an actor wants to create a certain role, he usually first explores certain physical characteristics of the character image, such as the way of speaking, behavioral characteristics, emotional expression, etc. When the actor is performing these physical expressions, it will bring the actor into the situation of the character, help him experience the inner world of the character, and complete the shaping of the character. In the process of actor's performance, it is generally required that the actor first experience the character, generate desire through experience, and then bring this desire into external action, that is to say, the actor should firstly integrate into the character, generate a certain emotion from the inside, and then show this emotion through action. For internal experience and external embodiment, the two are mutually unified, mutual influence and interaction. [7]

Performing artist Jiao Juyin once said, "Characters develop gradually, unevenly upward, in the actor's heart and appearance, and organically linked between the inner and the outer, that is to say, from a little bit of change to the whole, from quantitative change to qualitative change, and from the contradiction of inner forces to a unity of character."

The dramatist Jinshan has described the internal experience and external embodiment in performance as follows: "Without experience, there is noway to embody; without embodiment, why experience; experience should be deep, embodiment should be precise; embodiment should be outside, experience should be inside; internal and external combination, interdependence." This passage illustrates the dialectical and unified relationship between internal experience and external embodiment.[11]

When you are affected by the emotion of anger you will slap the table, argue loudly, or drop something; and in turn, when you drop something or slap the table there will be a hint of excitement inside. This behavior and psychological stimulation of each other, in the performance has a very important role, when some scenes need actors to show passion, can not be in order to achieve the purpose of the external embodiment and desperately let yourself imagine that have passion, the more you imagine that there is a passion, but this emotion will be farther away from you, it is better to create a passionate feeling through the physical action. Through physical movement, and the feeling of bringing yourself into the scene, you can naturally induce emotions during the performance process, thus creating a better characterization.

Drama performance is a unique art to move the audience by expressing the inner emotion of the character image, which requires the actor to experience the emotion of the character with all-round dedication in the performance process, and then embody it in an appropriate way in order to create a flesh-and-blood character image, which can be called as a performance with artistic charm.

Actors who want to create a perfect character image in theater performance must have a deep experience of the role, while finding the right way of expression, only both at the same time in order to vividly and distinctly show the character image in front of the audience.

5. Actors' internalization and externalization in the digital age

Expansion of resources for role shaping: The Internet provides actors with a vast amount of information resources, facilitating them to conduct in-depth research on historical backgrounds, cultural knowledge, and industry characteristics related to the role, thereby enabling a more comprehensive understanding of the role and enriching the connotations of the role. Actors can obtain detailed information about the era or profession of the role through online databases, academic articles, documentaries, etc. For example, when preparing to play an ancient emperor, an actor can search for a large amount of historical materials on the Internet to understand the political system and court life at that time, which helps to gain a deeper understanding of the character's situation and psychology.

Diversification of performance training methods: Digital technology has given birth to many new types of performance training tools and methods. For instance, by using virtual reality (VR) and augmented reality (AR) technologies, actors can experience different scenes immersively and enhance their emotional immersion. Online performance courses and workshops enable actors to access excellent teachers and teaching resources from different regions, broadening their performance ideas. Some performing arts training institutions use VR technology to allow actors to simulate performances in different environments, such as practicing on virtual stages and in different styles of architectural spaces, improving their adaptability.

Changes in performance space and audience interaction: Digital platforms provide actors with broader performance spaces, such as web dramas and short video platforms, enabling their works to reach a wider audience. Meanwhile, actors can directly interact with the audience through social media and other channels and obtain instant feedback, which helps them adjust their performances according to the audience's responses and better shape the roles. Some web drama actors communicate with fans through social media to understand the audience's preferences and expectations for the characters, and then strengthen these characteristics in subsequent performances to make the characters more deeply rooted in people's hearts.

New ways of role dissemination and image shaping: In the digital age, social media and the Internet have a fast dissemination speed and a wide range. The images of actors' roles can quickly become popular and form topics, which poses new challenges and opportunities for how actors shape and maintain the images of their roles. Actors need to pay more attention to the image shaping of the roles on the Internet. By releasing behind-the-scenes footage, character interpretations, and other content, they can guide the audience's understanding and love for the characters. At the same time, they also need to face the influence of online public opinion and adjust their performance and image shaping strategies in a timely manner. For example, some actors in popular TV dramas will share their shooting experiences and interesting stories about the characters on platforms like Weibo to increase the audience's favorability towards the characters.

6. Conclusion

In theater performance, actors need to handle the relationship between internal experience and external embodiment correctly. The first is that the actor should have a reasonable knowledge and full understanding of the role, on the one hand, the role in the script should be studied in depth, full knowledge of the role, and then try to understand and feel the emotions of the role, and then finally the appropriate acting skills to create a vivid and lively character; the other is that the actor needs to experience more of life, so as to deepen the understanding of the role

in the script. The second is the actor's internal experience of the role, the actor in the role, need to observe more people and things in real life, follow the law of the theater performance from real life, so that there is room for imagination in a particular situation, the use of from the outside to the inside, from the inside to the outside, inside and outside of the combination of the way to create a vivid image of the character. In the role experience, only when the actor puts in his or her own real emotion can the difference between the "real me" and the "fake me" be minimized. The third is that actors are good at using acting techniques to portray their roles in the performance process. The actor's external experience of the role is the process of performing the role, in which the actor should not only fully experience the role, but also pay attention to the use of good speech, form, expression and other performance skills to reflect the psychological activities of the role. At the same time, when creating the character image, the actor should not only express it through body language, but also add some unique ways of expression according to his own understanding of the character.

In conclusion, the goal of this article was to explore the intricate relationship between an actor's internal experience and their external embodiment in theater performance, with the aim of understanding how this interplay contributes to the creation of authentic and compelling character portrayals. Our major findings indicate that a deep and nuanced internal experience is essential for actors to achieve a convincing external embodiment, and that this process is influenced by a complex interplay of psychological, physiological, and technical factors.

These results can benefit researchers by providing a framework for understanding the cognitive and emotional processes involved in acting, which can inform both the training of actors and the analysis of performance. Furthermore, by highlighting the importance of aligning internal states with external expressions, our study offers practical insights for theater practitioners seeking to enhance the impact and authenticity of their performances.

However, our work has limitations, including a focus primarily on theoretical perspectives and a reliance on existing literature, which may not fully capture the dynamic and individual nature of the acting process. Additionally, the study did not incorporate empirical data from actor interviews or performance analyses, which could have enriched our understanding of the practical applications of the internal-external dynamic.

We suggest future research should focus on empirical studies that examine the internal experience and external embodiment of actors across different genres and cultural contexts. This could involve qualitative research methods, such as interviews and observations, to gain a deeper understanding of the personal and subjective aspects of the acting process. Furthermore, investigating the role of technology in mediating the actor's internal and external experiences, particularly in the era of digital theater, could offer new insights into the evolution of performance practices.

By addressing these areas, future research can build upon the foundation laid by this study, contributing to a more comprehensive understanding of the art of theater performance and the complex relationship between an actor's internal world and its external manifestation on stage. This will not only enrich academic discourse but also have practical implications for the training and development of actors, ultimately enhancing the power of theater to engage and move audiences.

References

1.Ye Tao and Zhang Mali, Introduction to the Art of Dramatic Performance, China Opera Press, 1990.
2.Hu Guide, Theater Performance Studies, China Drama Publishing House, 2009.
3.Stanislavski, The Complete Works of Stanislavski, China Film Press, 1959.

4.Benedetti J. The Actor at Work. Routledge; 1998.
5.Blair R. The Actor, Image, and Action: Acting and Cognitive Neuroscience. Routledge; 2008.
6.Brook P. The Empty Space. Touchstone; 1995.
7.Cox R, MacNeilage FP, Davis B. The Role of the Body in Acting: Cognitive and Neuroscience Perspectives. Journal of Consciousness Studies. 2008;15(10 - 11):6 - 24.
8.Hagen U. Respect for Acting. Macmillan; 1973.
9.Lecoq J. The Moving Body: Teaching Creative Theatre. Routledge; 2002.
10.Meisner S. On Acting. Vintage; 1987.
11.Salazar - Noguera J. Digital Media and the Actor's Inner and Outer Worlds. Theatre Topics. 2012;22(2):175 - 188.
12.Stanislavski. The Complete Works of Stanislavski. China Film Press; 1959.
13.Strasberg L. A Dream of Passion: The Development of the Method. Plume; 1988.
14.Ye Tao, Zhang Mali. Introduction to the Art of Dramatic Performance. China Opera Press; 1990.
15.Zarrilli P. Acting (Re)Considered: Theories and Practices. Routledge; 2002.
16.Hu Guide. Theater Performance Studies. China Drama Publishing House; 2009.

Research on the Artistic Aesthetics of Chinese Comedy Movies

Xiao Huan [1][0009-0006-7227-3894], Afeez Nawfal [1][0000-0002-5175-1731]

[1] Universiti Pendidikan Sultan Idris,Tanjung Malim, Perak, Malaysia

https://doi.org/10.33847/2712-8149.5.2_4

Received 29.09.2024/Revised 29.11.2024/Accepted 20.12.2024/Published 23.12.2024

Abstract. Comedy movies are one of the most important forms of movies, in which the director and comedians with unique styles can make the comedy movies have unique effects and styles. At present, there are two kinds of comedy movies in the domestic market, one is the comedy movies made in China, and the other is from Hollywood. In terms of the artistic means used, each comedy movie has its own uniqueness, so the comedy movies have a great influence on the domestic movie industry. On the basis of relevant theories, this article mainly takes famous comedy films at home and abroad as the research object, and analyzes comedy films at home and abroad from the angles of narrative form, means and discourse according to the texts of classic comedy films. Finally, it discusses the influence of domestic and foreign comedy movies on the aesthetic level of the public and the development prospect of Chinese comedy movies.

Keywords: comedy movies; narrative style; popular aesthetics; film industry

1. Introduction

Comedy movies have long been a cornerstone of the film industry, offering audiences a respite from the rigors of daily life through laughter and humor. They are not merely vehicles for entertainment but also profound reflections of societal norms, cultural values, and human experiences. This study aims to delve into the artistic aesthetics of Chinese comedy movies, exploring how they have evolved, the unique elements that define them, and their impact on the domestic and international film landscape.

The primary objective of this research is to analyze the narrative styles, comedic techniques, and cultural nuances that characterize Chinese comedy films, contrasting them with their Hollywood counterparts. By examining both the traditional and modern approaches to comedy in cinema, this study seeks to uncover the underlying mechanisms that make Chinese comedy movies resonate with their audience and contribute to the rich tapestry of global cinema.

This research contributes to the field in several significant ways.[2] Firstly, it provides a comprehensive framework for understanding the aesthetic evolution of Chinese comedy films within the context of changing societal values and technological advancements. Secondly, it offers insights into the creative processes and storytelling techniques that have been employed by Chinese filmmakers to craft comedies that are both commercially successful and artistically significant.[6] Thirdly, by comparing Chinese and Western comedic styles, this study sheds light on the cultural differences and similarities that influence the reception and appreciation of comedy across different audiences.[13]

Furthermore, this research aims to bridge the gap in scholarly discourse on Chinese comedy films, which has often been overlooked in favor of more mainstream genres. By highlighting the artistic merits and cultural significance of these films, this study hopes to stimulate further academic interest and encourage a more nuanced appreciation of Chinese comedy within the broader scope of film studies.[5]

In summary, this article endeavors to provide a thorough analysis of the artistic aesthetics of Chinese comedy movies, offering a fresh perspective on their role in the film industry and their potential to influence future cinematic expressions of humor and satire. Through this exploration, we aim to enrich the understanding of Chinese comedy films and their place within the global cinematic landscape.

Comedy is a medium to express the artistic image of laughter, which can give people a pleasant feeling while subtly conveying a good character and ideas. The first and foremost element of a comedy movie is laughter, and the source of laughter is usually taken from life, so the material for a comedy movie needs to be taken from real life as well.

Comedy movies have a very long history, and the first comedy movie in the world was the Lumière Brothers' documentary "Water for Gardeners". After this movie, comedy movies showed a booming trend. In the long process of development, many comedy directors and comedy masters have brought fun to our life and influenced the development of comedy movie industry with their unique charm and style.

Foreign comedy movies developed earlier, from the initial Charles Chaplin, and then after the Kim Carrey, so that the United States of America's Hollywood comedy has a great development. Nowadays, Hollywood comedy movie combines the strengths of all families and develops it to a whole new level.

The development of comedy movies in China is relatively late, and we have a deep impression of the earliest Stephen Chow, then Pan Changjiang, Ge You, Xu Zheng, Huang Bo, Wang Baoqiang and so on. Although it is hard to recognize Chinese drama films from the perspective of world cinema, the Chinese humor present in their films has created waves after waves in the Chinese film industry.

In terms of narrative style, foreign comedy movies are not so outstanding in terms of plot and narrative. Early foreign comedy movies did not have complete plots, but more often utilized the actors' witty and strange performances to form a fragment, thus implanting funny elements. For example, Chaplin's signature moves, Bean's eyes, and Kim Carrey's exaggerated expressions were the main factors of hilarity. Although the plot has been improved in the later stage, the whole plot and the narrative do not contain too many funny elements. If you take away the funny expressions of the actors, it's actually no different from ordinary movies, such as "Dumb and Dumber" and "The Mutant Man" by Kim Carrey. At the same time, from the beginning to the end, foreign films do not pay much attention to the funny elements of language and words, the audience laughs when watching the movie, and then there is seldom any thought-provoking reminiscence after watching the movie.

Domestic funny movies have always paid more attention to the shaping of the overall plot as well as the refinement of words and language, and on the contrary, they have been lighter on the individual exaggerated performances of the actors. In the early days, the plot, language, text, and personal performances of Stephen Chow's movies were all top-notch, setting off a wave of comedy movies in China. The box office success of Ge You's "Private Custom", Xu Zheng's "Lost in Transit" and "Lost in Thailand" has further demonstrated that domestic comedy movies pay more attention to the construction of the plot of the whole movie as well as the refinement of the language and text, and in turn, the individual performances of the actors are becoming more and more diluted.

Domestic and foreign comedy movies focus on the elements and the cultural elements of each place are inseparable, there is no one who is better said, but there is no doubt that the domestic film is increasingly diluted the level of the actor's own witty, quirky is not desirable. This article mainly focuses on the detailed analysis of the narrative style of domestic and foreign films, discusses the differences between the two, and seeks to complement the shortcomings and promote the development of the domestic comedy film industry. Table 1 below helps readers quickly understand different comedy movie styles and compare them with the Chinese comedy movies discussed in the text.

Table 1. Different styles of Chinese comedy movies.

Comedy Movie Style	Description	Representative Movies
Satirical Comedy	Uses exaggeration and satire to criticize social phenomena.	"A Chinese Odyssey"
Absurd Comedy	Generates humor through absurd and illogical plots.	"Crazy Stone"
Situational Comedy	Relies on dialogue and situational humor, often set in specific scenes.	"Lost on Journey"
Black Humor	Explores humor that arises from serious or tragic themes.	"Let the Bullets Fly"
Romantic Comedy	Combines elements of love and humor, usually ending happily.	"If You Are the One"

2. Comedy Movie Style Discourse

2.1 Narrative Perspective Art

In order to clarify the narrative perspective of comedy movies, we must first find the so-called narrative subject. From the narrative perspective of comedy film, the subject of the narrative is simply the storyteller, obviously, this is a more embodied interpretation, the actual storyteller is not just embodied in the person, it should be a kind of abstract painting reference, such as a certain kind of text, or it may be a kind of angle, a kind of narrator. In a comedy movie, the subject of the narrative may be a side or character, or it may be a storyteller who is hidden from the comedy movie.

After combing the domestic and foreign comedy movies, it can be clearly found that the narrative perspectives adopted are all omniscient and omnipotent narratives from God's point of view. God's perspective means that there is no specific storyteller, but the development of the story is still driven by some kind of force, which usually refers to the director or screenwriter of the comedy movie. This omniscient God's point of view narrative is the most acceptable to the audience, and is also the most commonly used. The audience watching the movie can also follow this perspective to watch the development of the story, in general, this God's perspective narrative art can be easily accepted by the audience, and at the same time will not have the limitations of the perspective.

In Stephen Chow's movie "The Saint of Gamblers", this God's point of view is even more obvious, in the gambling table when gambling cards, the audience can not only see the star of the week caught in the hands of the cards, but also follow the camera to watch the star of the week opponents currently using the cards, so that the audience will be in the opponents of the card is better than the star of the week when pinching cold sweat, will make the film to create the atmosphere to achieve the director's desired effect, and ultimately make the quality of the movie improved. Ultimately, the quality of the movie will be improved [2].

2.2 The Art of Figure Composition

Characterization is the soul of a comedy movie and the main core of its narrative. In a comedy movie, characters are an important means to express the ideas and contents of this movie. Therefore, how to successfully shape the task in comedy movies is very crucial, especially different from other types of movies, the characters in comedy movies are not imagined out of thin air, and each of its characters will embody what they want to express, so the core of comedy movies relies on the characters shaped in the whole movie to show, that is, it is necessary to pay attention to the composition of the characters in comedy movies.

There are many familiar characters in domestic comedy movies, such as Zun Zun Bao in "Journey to the West", Charlotte in "Charlotte's Trouble", and Tong Pak Fu in "Tong Pak Fu Points the Autumn Fragrance". Then, such as Bean, airplane head, A Dull, A Gua, disguised monster and so on in foreign films, although the composition of the characters, the domestic is mainly divided into two types of ancient and modern

costumes, foreign countries are divided into two types of idiosyncratic people and normal people, but domestic and foreign characterization has many common characteristics.

In many comedy movies both at home and abroad, usually the main characters of the movie are small but have their own very striking features. Most of the comedy movies usually work on the look of the characters in order to win the attention of the audience and make the attention impressed by the movie. For example, in Stephen Chow's movie "Journey to the West with Big Lies", when he first appeared on the scene, the character demonstrated was the big boss of the axe gang, wearing tattered clothes, full of beard, unkempt, with a strange bronze mirror hanging on his chest, and his appearance made the audience feel that the whole movie was very comedic. Especially in the movie "The Book of the Deer and the Tripod", Wei Xiaobao wearing a "tiger skin hat" modeling, so that the audience can not help but laugh, this hat was supposed to be China to children to wear a kind of hat, here the modeling design is more exaggerated, especially later, Wei Xiaobao in the capacity of an adult to wear a "tiger skin hat "when the audience was laughing.[4]

2.3 Narrative Form Art

So far, there are two main narrative forms used in comedy movies, one is the classic narrative form and the other is the modern narrative, which have their own characteristics and focuses.

(1) Classic Narratives

The classic narrative form has been popularized and mainstreamed since the early twentieth century, and is by far the most commonly used narrative form. Comedy movies made using the classic narrative form usually have a template, which is a conventional way of telling the story of the movie. This narrative form still dominates most movies today.

The classic narrative is a form of narration that has dominated feature filmmaking since the early 1900s and is by far the most popular type of storytelling. Movies that choose the classic narrative usually have a pattern to follow, such as the plot, characters, and structure, etc., and it always adopts a conventionalized narrative form. This kind of narrative form is still very popular today, whether it is Hollywood movies or Chinese movies, most of them adopt the classic narrative.

For example, Shaolin Soccer adopts a traditional classic narrative structure, from the search for brothers and sisters to form a soccer team, to the final match, and then to the national championship. For example, Lost in Thailand, Lost in Transit, The Trouble with Charlotte, and Dumb and Dumber all use the traditional narrative structure.[8]

(2) Modern Narratives

Modern narrative forms, on the other hand, are more transcendent and distinctive narratives. Modernist narrative refers to an artistic trend that became popular at the end of the twentieth century and is diametrically opposed to traditional narrative. The lens used is often more bizarre and elusive, and the story it represents does not follow the conventional development, and is often more fragmented, usually using some of the virtual lens to reflect some of the things that happen in real life, so as to map the laws of reality. Usually, this narrative form of the film are more abstract, difficult to understand, which carries the author to express the obscure ideas, and now there are also many domestic films using modern narrative form.

From the author's point of view, the most impressive is the "Journey to the West" its narrative style is broken, the overall plot with the repeated use of the moonlight box repeatedly in the front and back of the five hundred years for jumping, many people in the first time to see the time, are looking at the quite ambiguous, need to repeatedly watch, in order to understand which the overall structure of the movie, although its individual segments are more fragmented, but the entire film's plot structure is not broken! Although its individual fragments are more broken, the plot structure of the whole movie is not broken, and is more coherent [3].

2.4 The Art of Narrative Discourse

Comedy movies are generally commercial movies, that is to say, they aim at the final box office, so their production process mainly focuses on catering to the public's taste as the main means. And how to adopt the classic discourse to make it trendy to increase the impact of the movie becomes the place where the preparation and the director focus on.

Nowadays Chinese and foreign comedy movies incorporate many classic commercialized languages into the movies so as to inspire and educate the audience. That is to say, while making the audience laugh, they are also able to use some educational words and behaviors to cause the audience to think. If a vulgar comedy movie is just to make the audience laugh and is superficial, then a high level comedy movie needs to "teach" the audience to laugh, and it is a meaningful laugh.

Similarly, comedy movies also often adopt elite discourse to present the theme of the movie and the era. The so-called elite language is a language that focuses on exposing the ugliness, vulgarity and backwardness of the society, ridiculing the dark side of the society, praising the good qualities of human beings, and caring for the disadvantaged. Elite language has a certain degree of rationality and independence, so the use of elite language comedy scripts often seem a bit out of place in the world, not very much in line with the audience's life, which makes it difficult for some of the audience to accept this kind of comedy movie. Therefore, although many comedy movies nowadays use the elite language, they also interpret the elite language, so that the elite language can be embodied in a popular language, which can improve the influence of comedy movies and cater to the audience's aesthetic level.

For example, in the film "Truman's World", the production adopts the way of massification of elite discourse. The main purpose of the movie is to express that in today's society, all kinds of media tools gradually deprive people of their private space and freedom of existence, and at the same time, people also have the desire to manipulate, control and pry into other people's lives, thus destroying the lives of many people. The theme of the movie is very forward-looking, and the angle and intention of the movie are also very profound, but if the movie knowledge simply adopts the elite discourse to narrate this problem, it will make the audience's viewing experience become particularly poor. However, "Truman's World" adopts a popularized discourse, and the whole film is full of witty and exaggerated funny words and shots, which combine the film with their own lives, and ultimately experience the theme of the film [10].

3. The Influence of Popular Aesthetic Trends on Comedy Movies

3.1. Influence of the aesthetic psychology of popular art

Someone once said, "Comedy is national, while tragedy is global." This shows that comedy movies have certain limitations and are influenced by many regional factors such as country, culture, nationality and aesthetics. It is these influences that make the styles of comedy movies in different parts of the world completely different, and their narrative and focus in the movies are very different. Foreign Hollywood comedy movies, because of their cultural diversity, also show a diversified narrative style, even if one or two of them are not accepted by the audience, most of the comedy movies can still be loved by the audience. Similarly, it is difficult for foreign comedy movies to replace domestic comedy movies in the audience's mind. For example, at the beginning of the twenty-first century, when all kinds of comedy movies of Kim Carrey were introduced to China, many audiences found it inexplicable. But undeniably, from the world's point of view, Hollywood movies have high-tech production methods as well as post-processing, which is more inclined to the Hollywood narrative, the whole comedy movie is supported by the development of events, so that the audience can pay more attention to the beginning of the event, the development as well as the results, in the production of the results of the time, and naturally, the movie also came to an end.

The difference in the aesthetics of the audience for comedy movies is more obvious, especially the aesthetics of comedy movies for the Eastern and Western audiences are very different. This aesthetic is mainly related to culture. Western audience's aesthetic is more heroic, and they want to see things on screen that are not easy to see in life, that is to say, the so-called spectacle events outside of daily life. On the other hand, in China, the audience prefers to see some comedic events on the screen which are originated from life and taken from life, that is to say, they prefer the witty events which happen in their own life.

It is also because of the cultural differences between Chinese and foreign comedy movies that there is often a big difference between Chinese and foreign comedy movies when it comes to characterization. Very often, although both of them portray minor characters, the minor characters portrayed in Chinese comedy movies are those that can be found in the streets and alleys, or those who are known to the audience as the bottom of the hierarchy. While foreign movies also portray minor characters, they are very different from the minor characters in Chinese comedy movies, they more often portray strange people, that is, strange looking or strange character minor characters, who are not easy to find out from the streets and alleys.

It can be said that so far, both domestic and foreign comedy movies have responded well to the aesthetic needs expected by their audiences. Most foreign comedy movies are Hollywood movies, which need to be shown to audiences all over the world, so their culture is more diversified, and their narrative and discourse forms are also more diversified, so that audiences all over the world can understand the joy of the movie when enjoying it. Most of the domestic movies are only shown to the audience in their own countries, but with the development and progress of the Chinese movie industry, more and more works have begun to consider the audience around the world, so they are also slowly improving their own works, so that they can be in line with the aesthetic standard of the audience around the world.

3.2. Borrowing and Improvement of Chinese Dramatic Films

Comedy movies in mainland China began to originate from the silent film era. Zheng Zhengqiu's Labor Love is the earliest comedy film in China, and it is also similar to other comedy films in the world in the perspective of the use of various elements of comedy, and also the special use of everyday objects as one of the main comedic factors, for example, vendors fighting with fruits, and so on.

Undoubtedly, Stephen Chow still has a strong influence in China's comedy film industry, resulting in a long period of time, the domestic and Hong Kong and Taiwan in the conception of comedy films like to imitate Stephen Chow's comedy films to win box office, but all the failures have shown that comedy films in the process of development, just rely on imitation is still insufficient, there should be more innovation and development. For example, Xu Zheng's "Lost in Transit" and Huang Bo's "Crazy" series have created their own comedy features. First of all, when creating comedy movies, practitioners should understand that comedy movies should follow the aesthetic level of the public nowadays, that is, to combine with the spirit of the times and the art of discourse, etc.; secondly, they should fully realize that comedy movies must have the essence of entertainment, that is, the so-called art of laughter, and how to make the audience laugh is the ultimate goal of comedy movies; lastly, they should also adopt some new technological filming techniques and narrative means to make comedy movies more creative and innovative. Finally, we should adopt some new technology shooting techniques and narrative means to innovate the comedy movie, and we can't always think that comedy movie is a low-cost movie, which adopts low-cost in the characterization and scene manufacturing, and thus can't express the moral meaning of the movie well.

Excellent comedy movies will have the role of edutainment, this kind of movie can make the audience laugh, at the same time, have more touching thinking, have

a new level of understanding of life have experience. For example, in "The Trouble with Charlotte", it will let the audience after laughing, there is a deeper thinking about life, if their lives can start over again, how they will choose, whether to do the choice will be happier now, is that those who did not get the unattainable dream is more worthy of their own nostalgia, or is it more worthwhile to cherish their own immediate life, the people around them.

Most of the Chinese comedy movies are only suitable for specific groups of people to savor, which is the shortcoming of the current domestic comedy movies, and should be updated so that they can adapt to the psychology of more audiences of different ages and levels. In this regard, domestic movies can learn from the world's outstanding comedy movies, adopt their characteristic narrative means, genres and forms, and find their own position and characteristics from the world's culture. For example, the Indian movie "Three Stooges in Bollywood", which criticizes and opposes the traditional indoctrination education and the success of the main character in the end, makes the audience feel very happy, and at the same time, it cuts in from the angle of education, which is in line with the psychology of the majority of the audience, and at the same time, it also points out the educational problems that exist in more than 80% of the countries in the world.

In recent years, comedy movies in the mainland have made great development, which shows that practitioners in the domestic film industry have also begun to pay attention to comedy movies, and more practitioners have entered the comedy movie industry to develop and meet the expectations of the general domestic audience for comedy movies.

4. Features of Chinese Comedy Movies in the Digital Age

In the digital age, Chinese comedy movies have undergone significant transformations. The popularity of the internet has led to an increasing number of viewers choosing to watch movies online, a trend that has not only changed the distribution channels of movies but also influenced the creation and marketing strategies of movie content. Chinese comedy movies have begun to utilize digital technology more extensively for special effects, enhancing visual effects and the viewing experience. At the same time, content creators have placed greater emphasis on innovation, combining traditional elements with modern culture to attract younger audiences. Additionally, Chinese comedy movies are actively exploring international cooperation, expanding their global reach through cross-border co-productions and global distribution. The rise of social media has provided a new platform for film promotion, making film publicity more direct and interactive. Table 2 below provides an intuitive display of the features of Chinese comedy movies in the digital age, helping to understand how these features impact the film industry.

Table 2. Features of Chinese comedy movies in the digital age

Feature	Description
Online Viewing Trends	Describes how the internet has changed the way audiences watch and consume comedy movies.
Technological Impact	Discusses how digital technology affects film production and special effects.
Content Innovation	Analyzes how Chinese comedy movies attract young audiences through innovative content.
Cultural Integration	Shows how Chinese comedy movies integrate traditional elements with modern culture.
International Cooperation and Exchange	Describes how Chinese comedy movies expand their global influence through international cooperation.

5。Conclusion

Our study has revealed that Chinese comedy movies often employ a unique blend of narrative techniques and cultural references that distinguish them from their Hollywood counterparts. The use of local humor, the incorporation of social commentary, and the emphasis on character-driven stories are key elements that resonate with domestic audiences. Moreover, the findings suggest that the success of Chinese comedies lies in their ability to balance traditional comedic forms with modern sensibilities, reflecting the evolving tastes and values of the audience.

In conclusion, this article set out to explore the artistic aesthetics of Chinese comedy movies and their impact on the domestic and international film industry. The study aimed to analyze the narrative styles, comedic techniques, and cultural nuances that define these films, and to understand how they have evolved over time.

The primary goal of our article was to investigate the distinctive features of Chinese comedy movies and to assess their influence on the aesthetic sensibilities of the audience. We also sought to compare these films with those from Hollywood to understand the cultural and artistic differences.

Our major findings indicate that Chinese comedy movies have a distinct narrative style that is deeply rooted in local culture and humor. The success of these films is attributed to their ability to merge traditional elements with contemporary themes, creating a unique cinematic experience that appeals to a broad audience. Researchers can benefit from the results of this study by gaining a nuanced understanding of the comedic elements in Chinese cinema. This understanding can inform future analyses of film aesthetics and provide a framework for comparing comedic traditions across different cultures.

A limitation of our work is that it primarily focuses on a select number of films, which may not encompass the full spectrum of Chinese comedy movies. Additionally, the study did not account for the impact of recent technological advancements in film production and distribution on the evolution of comedy aesthetics.

For future research, we recommend expanding the scope to include a wider range of Chinese comedy films and exploring the influence of new media and digital platforms on the genre. It would also be beneficial to examine how global audience perceptions of Chinese comedy movies are shaped by cross-cultural exchanges and the international distribution of these films.

By addressing these areas, future research can build upon the foundation laid by this study, contributing to a more comprehensive understanding of the art of comedy filmmaking and its role in the cultural landscape. This will not only enrich academic discourse but also have practical implications for the training and development of filmmakers, ultimately enhancing the power of cinema to entertain and educate audiences worldwide.

References

1.Attardo S. Linguistic Theories of Humor. Mouton de Gruyter; 1994.
2.Bordwell D, Thompson K. Film Art: An Introduction. McGraw - Hill Education; 2008.
3.Carroll N. Notes on the Sight Gag. In: Horton AS, ed. Comedy/Cinema/Theory. University of California Press; 1991.
4.Chapple S, Kattenbelt C. Key Terms in Theatre and Performance Studies. Routledge; 2006.
5.Horton AS, McDougal J. Introduction: The Logic of Comedy. In: Horton AS, ed. Comedy/Cinema/Theory. University of California Press; 1981.
6.King G. Film Comedy. Wallflower Press; 2002.
7.Liu Fan. Narrative Strategies of Mainstream Commercial Movies in the Perspective of Creative Industries. Movie Art. 2006;3.
8.Neale S. Genre and Hollywood. Routledge; 2000.

9.Shen Guofang. The Eternal Mystery: On the Aesthetic Value Mechanism of Genre Films. Contemporary Cinema. 2004;6.
10.Staiger J. Perverse Spectators: The Practices of Film Reception. New York University Press; 2000.
11.Tudor A. Image and Influence: Studies in the Sociology of Film. St. Martin's Press; 1974.
12.Wen Dezhao. Postmodern Strategies of Parody - Comedy Film Narrative. Movie Literature. 2008;5.
13.Zabalbeascoa P. Translation and the Spanish Audiovisual Market. Routledge; 2012.
14.Wen Dezhao. Postmodern Strategies of Parody-Comedy Film Narrative [J]. Movie Literature. 2008;5.
15.Liu Fan. Narrative Strategies of Mainstream Commercial Movies in the Perspective of Creative Industries [J]. Movie Art. 2006;3.
16.Shen Guofang. The Eternal Mystery: On the Aesthetic Value Mechanism of Genre Films [J]. Contemporary Cinema. 2004;6.

Polyneuropathy in Rheumatoid Arthritis (literature review)

Iuliia Zhelnina [1][0000-0002-9586-1465], Tatiana Baidina [2][0000-0002-5114-0463], Alexander Zhelnin [3][0000-0003-1436-6145], Tatiana Trushnikova[4][0000-0001-9199-7392], Elena Shishkina [5][0000-0002-6198-1151]

[1] Perm Regional Clinical Hospital, Perm, Russian Federation
[2, 3, 4] E.A. Vagner Perm State Medical University, Perm, Russian Federation
[5] Kirov State Medical University, Kirov, Russian Federation

https://doi.org/10.33847/2712-8149.5.2_5

Received 26.08.2024/Revised 20.12.2024/Accepted 20.12.2024/Published 23.12.2024

Abstract. Rheumatoid arthritis is the most common rheumatological disease. In addition to joint pathology, it often causes damage of other organs and tissues. This article discusses the possibility of diffuse damage of the peripheral nervous system in rheumatoid arthritis - frequency, mechanisms of damage, peculiarities of the clinical symptoms. The relevance of this problem is due to the possibility of subclinical course of polyneuropathy in rheumatoid arthritis, and, consequently, the lack of diagnosis, while one of its variants - autonomic neuropathy, is a life-threatening pathology. In the presence of pain in the clinical picture of polyneuropathy, problems arise in its interpretation (neuropathic, nociceptive - joint pain), and, therefore, errors in dose adjustment of disease-modifying drugs are possible. For neurologists the problem of polyneuropathy in rheumatoid arthritis is interesting from the point of view of diagnosing the etiology of this disease, which is always a difficult task.

Keywords: rheumatoid arthritis, polyneuropathy, digital images.

1. Introduction

Rheumatoid arthritis (RA) is an immune-inflammatory (autoimmune) rheumatic disease characterized by progressive destruction of joints and damage of internal organs, the development of which is determined by a complex interaction of environmental factors and genetic predisposition, leading to global disturbances in the humoral and cellular immunity system [1]. The diversity of pathogenetic mechanisms of RA leads to the presence of various phenotypes and endotypes of the disease, which allows it to be considered not as "one disease", but as a clinical and immunological syndrome [2]. With the unconditional predominance of systemic autoimmune inflammation processes in the synovial membrane of the joints in RA there are also various extra-articular (systemic) manifestations: rheumatoid nodules, cutaneous vasculitis and vasculitis of other organs, neuropathy (mononeuritis, polyneuropathy - PNP), pleurisy and pericarditis, myocarditis, Sjogren's syndrome, eye damage, interstitial lung disease, generalized myopathy, damage to the blood system [3]. These seemingly minor manifestations often can play a leading or significant role in the clinical picture of the disease. This fully applies to polyneuropathy, although its presence in RA is not mandatory. The central place in the clinical picture of RA, of course, is occupied by pain, the source of which is joint inflammation and pathology of extra-articular soft tissues. However, rheumatologists often point out that the severity of pain does not correspond to the severity of inflammation. This circumstance can be explained by the chronic nature of the pain syndrome, which leads to the transformation of noci- and antinociceptive mechanisms with the formation of peripheral and central sensitization and gives pain an individual

character in each specific case [4, 5]. In addition, a number of researchers note that the characteristics of pain in RA do not always correspond to nociceptive pain and can acquire neuropathic features [6]. In this case, the question naturally arises about the possibility of developing PNP in RA (in addition to the well-known mononeuropathies and carpal tunnel syndrome) [7]. This issue is extremely important for the treatment of patients with RA, since an incorrect interpretation of pain can lead to both an unjustified escalation of cytostatic therapy and to the ineffectiveness of pain syndrome treatment. As for neurological diseases, the main problem of any PNP is to determine its cause, which is only possible in 50% of patients [8, 9]. If a patient suffers from RA, can this explain the PNP he has? To answer this question, we need to know the following: do PNP develop in patients with RA and what clinical features do they have?

2. Objective of the study

Objective of the study is to characterize the possibility of developing PNP in RA and describe its main clinical characteristics.

3. Research data and methodology

Four databases (PubMed, MEDLINE, Web of Science, and Scopus) were searched for systematic reviews, case reports, and clinical studies concerning the combination of PNP and RA.

4. Results

There are few data on the possibility of PNP development in RA in the current literature. The available data on the frequency of PNP in RA vary considerably - it can be registered in 10.81% - 75.28% of patients [10]. That, apparently, depends on the method of diagnosis, duration of the disease [11] and variability of selection criteria; the assessment of prevalence is additionally complicated by a large proportion of asymptomatic patients. In particular, Agarwal V. et al., 2006 [12], examining 108 patients with RA, found clinical signs of PNP in the form of paresthesias in the limbs - in 23, decreased vibration sensitivity - in 9, decreased or absent tendon reflexes - in 28, electrophysiological - in 62, mainly in the form of signs of axonal lesions (only in 9 - demyelination). 23 biopsies of the calf nerve were performed and perineural thickening (n = 5, amyloid deposits n = 4), infiltrate of periva-vascular lymphomononuclear cells (n = 4), loss of myelinated fibers (n = 2) and necrotizing vasculitis (n = 1) were detected. No reliable conclusions about the pathogenesis of the detected disorders were made, as there was no association of neuropathy with RA duration, seropositivity, joint erosions and deformities, previous intake of disease-modifying drugs, and disease activity [12]. The authors suggested the vascular nature of PNP or the consequence of drug toxicity of anti-rheumatic drugs.

Bayrak A.O. et al., 2010 [13], having examined 60 patients with RA, revealed electrophysiological signs of PNP in 10 of them. Two patients had mild symmetrical sensory neuropathy and eight had mild symmetrical sensorimotor PNP, in all cases - axonal. The development of PNP was associated with a long course of the disease, high scores on the DAS28 (Disease Activity Scale for Rheumatoid Arthritis) [14], NSS (Neuropathy Symptom Scale) [15]. There was no connection with rheumatoid factor, therapy or joint deformation. There are data from a comprehensive Chinese survey [16] of 834 patients with RA, in which clinical signs of peripheral nervous system damage were detected in 51 (6%), including PNP in 28, ENMG examination was performed on 44 patients. All patients with PNP had sensory disturbances characteristic of peripheral nervous system damage (most often a feeling of numbness), including neuropathic pain. Motor disturbances (amyotrophy,

hyporeflexia) were less common. Comparison of various parameters of patients with PNP with similar parameters of patients without peripheral nervous system damage, as well as with patients with multiple peripheral nervous system damage, showed more pronounced parameters of inflammatory status (high levels of leukocytes, platelets, ESR, CRP and rheumatoid factor), but a lower level of albumin. According to the researchers, the most probable mechanism of the development of PNP in patients with RA was vasculitis vasa nervorum, which is part of generalized vasculitis in RA. The assumption about such a mechanism for the development of PNP in RA was made by Weller R.O. et al. back in 1970 [17]. These same authors noted the axonal nature of damage of the peripheral nervous system in RA.

Similar data about the relationship between PNP in RA and rheumatoid factor were obtained by Ding Y.Q. et al. (2021), who, comparing 46 patients with RA with PNP and 92 patients with RA without PNP, found that in the presence of PNP the rheumatoid factor ($p = 0.001$) was higher. They also supported the point of view to the mechanism of damage of the peripheral nervous system in RA mediated by generalized vasculitis, including vasa nervorum vasculitis, since in the group with PNP, the percentage of cutaneous vasculitis ($p = 0.042$) was higher [18]. The study with the selection of a specific contingent of patients is of interest - 51 people with diagnosed RA and foot deformity. Demographic and clinical characteristics of patients were recorded, and a detailed neurological examination was carried out. Surface sensation, pain, heat, vibration, and discrimination sensitivity were assessed in each foot, and their sum was used to determine the sensory deficit index (SDI) from 0 to 10. The presence of SDI was assessed by electrophysiological methods. Impaired sensitivity during examination was detected in 39 patients (74%); in 27 patients (52.9%) SDI was determined electrophysiologically. Patients with sensory deficit were found to have a statistically significant deterioration in the general health and functional capabilities of the foot, including mobility and walking, compared with patients with normal sensory function. Thus, PNP makes a significant contribution to the clinical picture of the disease in patients with RA [19]. In the study of Kaeley N. et al., 2019 [20] 89 patients with RA were examined, 75.28% ($n = 67$) of them had PNP revealed electrophysiologically (always axonal), while 20.89% (14 patients out of 67) had clinical disturbances of superficial sensitivity. There are studies in which PNP was detected in 39.19% of patients with RA [21] and in 33% [22].

Summarizing these data with the results of the other studies we can note the main features of PNP in RA: it can occur both clinically obvious and subclinically [23, 24], some patients may not have it. Neuropathy mainly occurs in seropositive patients [25] at late stages of the disease [26], accompanying other extra-articular manifestations such as rheumatoid nodules and purpura. Motor PNP in RA is rare [27, 28], the number of observations is small and does not provide reliable information about its nature, however, it is known that it can be acute or subacute, and the possibility of its occurrence indicates a variety of mechanisms of the development of PNP in RA [29]. By the nature of the clinical symptoms, PNP in RA is most often sensory [29], with mainly superficial sensitivity affected, its decrease is often accompanied by neuropathic pain. By the nature of the damage, the PNP in RA is most often axonal [30]. Thus, PNP in RA could be classified as a neuropathy of small fibers in the presence of damage of the autonomous peripheral formations. And there are such studies proving the presence of autonomic neuropathy (AN) in patients with RA. However, the data from such studies are poorly comparable with each other and do not meet modern methodological requirements for a comprehensive assessment of the autonomic nervous system using 5 standard tests (changes in heart rate during slow deep breathing, Valsalva test, orthostatic test, 30:15 test, isometric load test) [31], or by studying heart rate variability [32], pharmacological tests, as well as specific methods that reveal autonomic dysfunction in the gastrointestinal, urogenital, and respiratory systems [33]. Most studies used only one of the indicators, as a result,

the data on the state of the AN in patients with RA are not very representative. There is a systematic review by Adlan A.M., 2014 [34], which, based on the analysis of 40 studies, concludes that 60% of patients with RA have autonomic dysfunction with a decrease of parasympathetic activity and an increase of sympathetic activity of the autonomic nervous system, the same review notes the insufficient data to determine the cause-and-effect relationships between inflammation and dysfunction of the autonomic nervous system in RA. A meta-analysis of 35 studies of heart rate variability in patients with RA and spondyloarthritis [35] showed the presence of cardiac AN with a decrease of parasympathetic influences in this category of patients, and the indicators of autonomic dysfunction were associated with markers of inflammation. Most of these studies examined ESR and/or CRP, with one article [36] reporting an inverse association between serum IL-6 and autonomic dysfunction. Most studies, with the exception of one [37], found no association between RA duration and AN values. These results suggest that inflammation in RA plays a greater role in the development of AN than disease duration [35]. In summary, RA is one of the most common causes of small fiber PNP, yet in most patients with RA, AN is not assessed and, therefore, the diagnosis of small fiber PNP is not established [38,40]. The use of skin biopsy to measure intraepidermal nerve fiber density is probably the most widely used and studied method for diagnosing small fiber PNP and should be kept in mind in clinical practice [40].

The pathogenesis of immune axonal neuropathies, including those in RA, is complex [41, 42]. The vital activity of peripheral nerves is provided both by neuronal bodies due to axonal transport and by blood vessels, the latter being especially important for nerves with long axons [43]. The complex structural and functional organization of the vasa nervorum in combination with the low pliability of the perineurium, which prevents an increase of endoneurial volume, may explain the vulnerability of peripheral nerves to a slight increase in capillary permeability: endoneurial edema sharply increases hydrostatic pressure and leads to vascular compression and subsequent decrease in blood flow and ischemia [44]. Systemic vasculitis, including those in RA, can involve the vasa nervorum (Figure 1) [45].

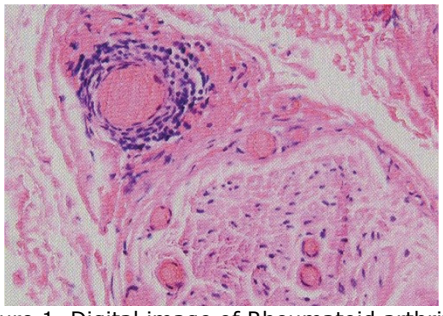

Figure 1. Digital image of Rheumatoid arthritis.

As shown on Figure 1, biopsy of the calf nerve reveals perivascular inflammation of epineural vessels and scattered perineural and endoneural dilated capillaries with thickened walls. Paraffin section stained with hematoxylin and eosin [45].

Inflammatory damage of the vessel walls, their thrombosis, limit blood flow, causing nerve ischemia [45]. A pathogenetic model with the following sequences has been proposed: autoreactive T-cells are recruited to the peripheral nervous system, recognize antigens presented by macrophages, endothelial cells and Schwann cells, undergo activation by cell adhesion molecules and chemotactic cytokines and ultimately mature or recruit cytotoxic T-cells, which mediate the destruction of vessel walls [46]. Although humoral immune mechanisms are of lesser importance, they also contribute to vasculitis of the vasa nervorum, as evidenced by deposits of

immunoglobulin and complement in the walls of epineurium vessels, implying either in situ formation of immune complexes or deposition of immune complexes with subsequent activation of the complement system and recruitment of phagocytes [47]. Nerve biopsy is indicated whenever there is a high suspicion of vasculitis but there is no confirmatory evidence from other paraclinical tests [48]. The classic histopathological findings of vasculitic neuropathy are: inflammatory infiltration of the vasa nervorum with wall destruction, fibrinoid necrosis of the sheath with fragmentation of the internal elastic lamina, and centrofascicular axonal degeneration. In older lesions, fibrinoid necrosis is replaced by extensive fibrosis, but inflammatory cells are still present at the periphery [49].

In addition to vasa nervorum vasculitis, which leads to ischemic damage of the axon in patients with immune axonal neuropathy, direct damaging mechanisms are also involved - immune, inflammatory and metabolic [50,51,52,53], that is, there is direct damage of nerve axons by cytokines [54], antibodies [55] or cytotoxic cells [56].

As for drug-induced PNP in RA, judging by the literature, it is unlikely. It is known that toxic PNP that occur under the influence of chemotherapy in [57]. Those drugs that are used to treat RA do not damage the peripheral nervous system. The most common disease-modifying drug used in RA is methotrexate. PNP is not in the list of side effects of this drug. The study by Muanda FT et al. [58], based on the analysis of treatment of 6909 elderly people with RA, showed that the structure of adverse events does not include damage of the peripheral nervous system. Other cytostatics used to treat RA (leflunomide, sulfasalazine) also do not cause PNP [2]. Monoclonal antibodies for the treatment of RA also do not have PNP in the list of adverse events [59]. The exception is anti-TNFα drugs, which very rarely, but can contribute to demyelination, but not of the peripheral, but of the central nervous system [60]. And only in the work of Delcoigne B. et al [61] there is an indication of the possibility of demyelination of the peripheral nervous system during the treatment of RA with anti-TNFα drugs (they observed a total of 179 neuroinflammatory events over 267,314 person-years, including PNP in the form of Guillain-Barré syndrome, chronic inflammatory demyelinating PNP and multifocal motor neuropathy).

5. Conclusions

In summary, current evidence suggests that PNP, overt or subclinical, is common in RA patients, particularly in seropositive, and in the late stages of the disease. It is often axonal and sensory in its clinical manifestations, often - small fiber PNP. Dysfunction of the ANS is a feature of PNP in RA, although it does not occur in all patients. The profile of autonomic nervous system dysfunction found in RA patients (reduced parasympathetic and increased sympathetic activity) is associated with an increased risk of cardiovascular disease and mortality. Further studies are needed to determine the true prevalence of AN in RA, to characterize RA patients with impaired autonomic nervous system function, and to determine the prognostic role of autonomic nervous system assessment in predicting cardiovascular and mortality risk in RA patients. The mechanisms of PNP damage in RA are vasculitis and direct inflammatory autoimmune reactions. Thus, knowledge of the possibility of developing of PNP in RA and understanding its pathogenesis will allow us to adequately assess the clinical picture of the disease and make adjustments to therapy.

References

1. Nasonov, E., Karateev, D., Balabanova, R. Rheumatoid arthritis. In: Rheumatology. National guidelines. Moscow: GEOTAR-Media (2008).
2. Rheumatoid arthritis. Clinical guidelines of the Russian Federation (2021). https://diseases.medelement.com/disease/

3. Rheumatology: clinical guidelines / edited by Academician of the Russian Academy of Medical Sciences. Nasonov, E. 2nd ed. Moscow: GEOTAR-Media (2010).
4. McWilliams D., Walsh D.: Pain mechanisms in rheumatoid arthritis. Clin Exp Rheumatol. 107(5), 94-101 (2017).
5. Mathias, K., Amarnani, A., Pal, N. et al.: Chronic Pain in Patients with Rheumatoid Arthritis. Curr Pain Headache Rep. 25(9), 59 (2021).
6. Dubois-Mendes, S., Meneses, F., De Andrade D.: Neuropathic pain in rheumatoid arthritis and its association with Afro-descendant ethnicity: a hierarchical analysis. Psychology, Health & Medicine 26(3), 278-288 (2021).
7. Li, Y., Jiang, L., Zhang, Z., et al.:Clinical characteristics of rheumatoid arthritis patients with peripheral neuropathy and potential related risk factors. Clin Rheumatol. 38(8), 2099-2107 (2019).
8. Levin, O.: General approaches to the treatment of polyneuropathies. Modern therapy in psychiatry and neurology 1, 4-12 (2018).
9. Sommer, C., Geber, C., Young, P., et. al.: Polyneuropathies. Dtsch Arztebl Int. 115(6), 83-90 (2018) .
10. Kaeley, N., Ahmad, S., Pathania, M., Kakkar, R. :Prevalence and patterns of peripheral neuropathy in patients of rheumatoid arthritis. J Family Med Prime Care 8, 22–6 (2019).
11. Kumar, B., Das, M., Misra, A.: A cross-sectional study of association of serostatus and extra-articular manifestations in patients with rheumatoid arthritis in a teaching hospital. J Family Med Prime Care 9, 2789–93 (2020).
12. Agarwal, V., Singh, R., Wiclaf et al.: A clinical, electrophysiological, and pathological study of neuropathy in rheumatoid arthritis. Clin Rheumatol. 27(7), 841-4 (2008).
13. Bayrak, A., Durmus, D., Durmaz, Y., et al.: Electrophysiological assessment of polyneuropathic involvement in rheumatoid arthritis: relationships among demographic, clinical and laboratory findings. Neurol Res. 32(7), 711-4 (2010).
14. Prevoo, M., van't Hof, M., Kuper, H. et al.: Modified disease activity scores that include twenty-eight-joint counts. Development and validation in a prospective longitudinal study of patients with rheumatoid arthritis. Arthritis Rheum. 38(1), 44-8 (1995).
15. Ziegler, D., Keller, J., Maier, C. et al.: Diabetische Neuropathie. Diabetologie und Stoffwechsel. 14(2), 243-257 (2019).
16. Li, Y., Jiang, L., Zhang, Z. et al.: Clinical characteristics of rheumatoid arthritis patients with peripheral neuropathy and potential related risk factors. Clin Rheumatol. 38(8), 2099-2107 (2019).
17. Weller, R., Bruckner, F., Chamberlain, M.: Rheumatoid neuropathy: a histological and electrophysiological study. J Neurol Neurosurg Psychiatry 33(5), 592-604 (1970).
18. Ding, Y., Zhang, L., Zeng, H., Liu, S. Clinical analysis of 46 rheumatoid arthritis patients with peripheral neuropathy. Zhonghua Nei Ke Za Zhi. 60(3), 222-226 (2021).
19. Karaca Umay, E., Gurcay, E., Karsli, P. et al.: Sensory disturbance and polyneuropathy in rheumatoid arthritis patients with foot deformity. Rev Bras Reumatol Engl Ed. 56(3), 191-7 (2016).
20. Kaeley, N., Ahmad, S., Pathania, M., Kakkar, R.: Prevalence and patterns of peripheral neuropathy in patients of rheumatoid arthritis. J Family Med Prime Care 8(1), 22-26 (2019).
21. Biswas, M., Chatterjee, A., Ghosh, S. et al.: Prevalence, types, clinical associations, and determinants of peripheral neuropathy in rheumatoid patients. Ann Indian Acad Neurol. 14, 194–7 (2011).
22. Sim, M., Kim, D., Yoon, J., et al.: Assessment of peripheral neuropathy in patients with rheumatoid arthritis who complain of neurologic symptoms. Ann Rehabil Med. 38,249–55 (2014).
23. Joaquim, .F, Appenzeller, S.: Neuropsychiatric manifestations in rheumatoid arthritis. Autoimmun Rev. 14(12), 1116-22 (2015).
24. Ramos-Remus, C., Duran-Barragan, S., Castillo-Ortiz, J.: Beyond the joints: neurological involvement in rheumatoid arthritis. Clin Rheumatol. 31(1), 1-12 (2012).
25. Ropper, A., Samuels, M., Klein, J.: (2014). Asymmetrical and Multifocal Polyneuropathies (Mononeuropathy, or Mononeuritis Multiplex). Adams and Victor's Principles of Neurology. 10th Edn: McGraw-Hill Education Medical 1341–1343 (2014).
26. Bril, V., Katzberg, H.:. Acquired immune axonal neuropathies, Continuum (Minneap Minn). 20 (5 Peripheral Nervous System Disorders), 1261–1273 (2014).
27. Kaeley, N., Ahmad, S., Pathania., M, Kakkar, R.: Prevalence and patterns of peripheral neuropathy in patients of rheumatoid arthritis. J Family Med Prime Care 8, 22–6 (2019).

28. Bekkelund, S., Torbergsen, T., Husby G., Mellgren, S. Myopathy and neuropathy in rheumatoid arthritis. A quantitative controlled electromyographic study. J Rheumatol. 26, 2348–51 (1999).
29. Naum, R., Gwathmey, K.: Autoimmune polyneuropathies. Handb Clin Neurol. 195, 587-608 (2023).
30. Agarwal, V., Singh, R., Wiclaf et al.: A clinical, electrophysiological, and pathological study of neuropathy in rheumatoid arthritis. Clin Rheumatol. 27(7), 841-4 (2008).
31. Report and recommendations of the San Antonio conference on diabetic neuropathy. Ann Neurol. 24(1), 99-104 (1988).
33. Tkacheva, O., Vertkin, A.: Diabetic autonomic neuropathy. M.: GEOTAR - Media. - 176 (2009).
34. Adlan, A., Lip, G., Paton, J. et al.: Autonomic function and rheumatoid arthritis: a systematic review. Semin Arthritis Rheum. 44(3), 283-304 (2014).
35. Provan, S., Olstad, D., Solberg, E. et al.: Evidence of reduced parasympathetic autonomic regulation in inflammatory joint disease: A meta-analyses study. Semin Arthritis Rheum. 48(1),134-140 (2018).
36. Kosek, E., Altawil, R., Kadetoff, D. et al.: Evidence of different mediators of central inflammation in dysfunctional and inflammatory pain--interleukin-8 in fibromyalgia and interleukin-1 beta in rheumatoid arthritis. J Neuroimmunol. 280, 49-55 (2015).
37. Anichkov, D., Shostak, N., Ivanov. D.: Heart rate variability is related to disease activity and smoking in rheumatoid arthritis patients. Int J Clin Pract. 61, 777-83 (2007).
38. Biswas, M., Chatterjee, A., Ghosh, S. et al.: Prevalence, types, clinical associations, and determinants of peripheral neuropathy in rheumatoid patients. Ann. Indian Acad. Neurol. 14, 194–197 (2011).
39. De Souza, J., Trevisan, T., Sepresse, R. et al.: Peripheral Neuropathy in Systemic Autoimmune Rheumatic Diseases-Diagnosis and Treatment. Pharmaceuticals (Basel) 16(4), 587 (2023).
40. Devigili, G., Tugnoli, V., Penza, P. et al.: The diagnostic criteria for small fiber neuropathy: From symptoms to neuropathology. Brain 131, 1912–1925 (2008).
41. Tulbă, D., Popescu, B., Manole, E., Băicuș, C.: Immune Axonal Neuropathies Associated With Systemic Autoimmune Rheumatic Diseases. Front Pharmacol. 14, 12 (2021).
42. Zaottini, F., Picasso, R., Pistoia, F. et al.: High-resolution ultrasound of peripheral neuropathies in rheumatological patients: An overview of clinical applications and imaging findings. Front Med (Lausanne) 31, 9 (2022).
43. Ishibe K., Tamatsu Y., Miura M., Shimada K. Morphological study of the vasa nervorum in the peripheral branch of human facial nerve. Okajimas Folia Anat. Jpn. 88(3), 111–119 (2011).
44. Mizisin, A., Weerasuriya, A.: Homeostatic regulation of the endoneurial microenvironment during development, aging and in response to trauma, disease and toxic insult. Acta Neuropathol. 121(3), 291–312 (2011)
45. Cojocaru. I., Cojocaru, M., Silosi, I., Vrabie, C.: Peripheral nervous system manifestations in systemic autoimmune diseases. Maedica (Bucur) 9(3), 289-94 (2014).
46. Sampaio L., Silva L. G., Terroso G. et al.. Vasculitic neuropathy. Acta Reumatol Port. 36(2), 102–109 (2011).
47. Collins, M., Arnold, W., Kissel, J.: The neuropathies of vasculitis. Neurol. Clin. 31(2), 557–595, (2013).
48. Bril, V., Katzberg, H.: Acquired immune axonal neuropathies. Continuum (Minneap Minn). 20(5 Peripheral Nervous System Disorders), 1261-73 (2014).
49. Vallat, J., Vita, l., Magy, L. at al.: An update on nerve biopsy. J Neuropathol Exp Neurol. 68(8), 833-44 (2009).
50. Bril, V., England, J., Franklin, G. et al.: Evidence-based guideline: treatment painful diabetic neuropathy: a report of the American Academy of Neurology, the American Association of Neuromuscular and Electrodiagnostic Medicine, and the American Academy of Physical Medicine and Rehabilitation. Neurology 76 (20), 1758–1765 (2011).
51. Snoussi, M., Frickha, F. , Bahloul, Z.: Peripheral neuropathy in connective tissue diseases, in Demystifying polyneuropathy: IntechOpen. Editor Ambrosi, P., 568 (2019).
52. De Souza, J., Trevisan, T., Sepresse, S. et al.: Peripheral Neuropathy in Systemic Autoimmune Rheumatic Diseases-Diagnosis and Treatment. Pharmaceuticals (Basel) 16(4), 587 (2023).
53. Rajeshwari, B., Kumar, S.: Rheumatoid Neuropathy: A Brief Overview. Cureus 15(1), 34127 (2023).

54. Uceyler, N., Kafke, W., Riediger, N., He, L. et al.: Elevated proinflammatory cytokine expression in affected skin in small fiber neuropathy. Neurology 74, 1806–1813 (2010).
55. Hoeijmakers J., Faber C., Lauria G., Merkies I., Waxman S.: Small-fiber neuropathies—Advances in diagnosis, pathophysiology and management. Nat. Rev. Neurol. 8, 369–379 (2012).
56. Birnbaum, J., Lalji, A., Saed, A., Baer, A.: Biopsy-proven small-fiber neuropathy in primary Sjögren's syndrome: Neuropathic pain characteristics, autoantibody findings, and histopathologic features. Arthritis Care Res. 71, 936–948 (2019).
57. Burgess, J., Ferdousi, M., Gosal, D.: Chemotherapy-Induced Peripheral Neuropathy: Epidemiology, Pathomechanisms and Treatment. Oncol Ther. 9(2), 385-450 (2021).
55. Muanda, F., Blake, P., Weir, M. et al.: Low-Dose Methotrexate and Serious Adverse Events Among Older Adults With Chronic Kidney Disease. JAMA Netw Open. 6(11), 2345132 (2023).
59. Perricone, C., Castellucci, A., Cafaro, G.: Rational approach to the prescription of anti-rheumatic drugs in rheumatoid arthritis: a product leaflet-based strategy in Italy. Front Immunol. 24, 15 (2024).
60. Gartlehner, G., Hansen, R., Jonas, B. et al.: The comparative efficacy and safety of biologics for the treatment of rheumatoid arthritis: a systematic review and metaanalysis. J Rheumatol. 33, 2398–408 (2006).
61. Delcoigne, B., Kopp, T., Arkema, E. et al.: Exposure to specific tumor necrosis factor inhibitors and risk of demyelinating and inflammatory neuropathy in cohorts of patients with inflammatory arthritis: a collaborative observational study across five Nordic rheumatology registers. RMD Open. 9(1), (2023).

Journal of Digital Art & Humanities (JDAH) has **ISSN 2712-8148** registered at the ISSN Centre in Cyprus. Each published article has been assigned by DOI, ORCID.

Aims and Objectives

Published online by Institute of Cited Scientists (ICS), Cyprus, two times a year since 2020, Journal of Digital Art & Humanities (JDAH) is an international peer-reviewed journal which aims at the latest ideas, innovations, trends, experiences and concerns in the field of the arts & humanities. Our journal bridges the humanities, artistic, and scientific disciplines. It is a nexus for information exchange among academia and industry addressing theory, criticism, and practice.

The main goal of this journal is to efficiently disseminate original findings generated by human brain with utilizing modern information/digital technologies with multidisciplinary approach.

Topics discussed in this journal include the following: Digital Technology in Public Administration; Artificial Intelligence in Civil Justice; Digital Technology in Theater and Movie; Digital Technology in Health Care.

The views, opinions and data expressed in any publication reflect only those of the individual author or contributor(s) and not those of ICS and/or the publisher.

ICS and/or the editors disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the journal content.

Editorial Board

Editor-in-Chief Tatiana Antipova, Institute of Cited Scientists, Cyprus
https://orcid.org/0000-0002-0872-4965

Editors

Achmad Nurmandi, Universitas Muhammadiyah Yogyakarta, Indonesia
https://orcid.org/0000-0002-6730-0273
Ahamad Tarmizi Azizan, Asian Southeast Digital Arts Association, Malaysia
https://orcid.org/0000-0003-4361-147X
Antonio Donizeti da Cruz, Universidade Estadual do Oeste do Paraná, Letras, Brazil
https://orcid.org/0000-0002-4672-7542
Ari Riswanto, Universitas Pendidikan, Bandung, Indonesia
https://orcid.org/0000-0002-0924-7996
Florin Popentiu-Vlădicescu,"Elena Teodorini" Academy of Arts and Sciences, London, UK
https://orcid.org/0000-0002-0857-117X
Jon W. Beard, Iowa State University, Ames, US
https://orcid.org/0000-0002-6274-6567
Indra Bastian, Universitas Gadjah Mada, Yogyakarta, Indonesia
https://orcid.org/0000-0003-4658-8690
Indrawati Yuhertiana, Universitas Pembangunan Nasional Veteran Jatim, Surabaya, Indonesia
https://orcid.org/0000-0002-1613-1692
Narcisa Roxana Moşteanu, American University of Malta, Malta
https://orcid.org/0000-0001-5905-8600
Narmina Rahimli, Impact Consulting, Hong Kong, China
https://orcid.org/0000-0002-4755-4604
Patricia Ioana Riurean, Synevo, Bucharest, Romania
https://orcid.org/0000-0003-1683-0052
Rashmi Gujrati, Tecnia Institute of Advanced studies, New Delhi, India
https://orcid.org/0000-0002-1128-3742

Contact information

Journal URL: https://ics.events/journal-of-digital-art-humanities/
Email: publ@ics.events, conf@ics.events

Printed online from the original layout under the imprint at:
1, Vlachou, Nicosia, The Republic of Cyprus

The picture on JDAH cover was painted by Antonio Donizeti da Cruz, Brazil.