



UTILIZATION OF ARTIFICIAL INTELLIGENCE IN CSR PROGRAMS FOR SUPPORTING REGIONAL ECONOMIC DEVELOPMENT

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ABSTRACT

Development digital technology has push change in various aspect activity companies, including implementation Corporate Social Responsibility (CSR). Utilization Artificial Intelligence (AI) in CSR programs is one of the potential innovation increase effectiveness, efficiency, and sustainability of social programs company in support development economy area. This article aim For analyze the role of AI in CSR program transformation, its contribution to empowerment economy society, as well as opportunities and challenges its implementation in support development economy area. The method used is study qualitative with approach studies literature (library research), which was carried out through collection, study, and analysis various source scientific in the form of journal international and national, books academic, report institution international, as well as relevant publications with AI, CSR, and development economy area. Data analysis was carried out use technique analysis descriptive-qualitative For identify connection between AI utilization and effectiveness CSR implementation. Study results show that AI is capable transform implementation of CSR from a holistic approach administrative going to a more approach strategic and data -driven. The use of AI supports identification need public in a way more accurate, improve quality taking decision, strengthening implementation draft Creating Shared Value (CSV), as well as increase effectiveness of empowerment programs economy society, especially for MSMEs and development source Power humans. In addition, AI contributes in increase quality monitoring and evaluation of CSR programs so that can create impact more social and economic sustainable. The use of AI also has the potential speed up development economy area through strengthening innovation, improvement productivity and development economy based knowledge. However Thus, the implementation of AI is still face various challenges, including the digital divide, limitations literacy technology, high cost implementation, risk of algorithm bias, and issue ethics and data protection. This study conclude that AI has potential big For increase CSR contribution to development economy area if supported by good governance, collaboration multi-stakeholder, improvement capacity source Power humans, as well as implementation principle ethics in utilization technology. Therefore that, AI does not only functioning as tool technology, but also as instrument strategic that can strengthen effectiveness of CSR programs and encourage creation development better economy inclusive and sustainable.

1. INTRODUCTION

Development ongoing digital technology in a way rapidly has change various aspect life, including method organizations and companies operate activity business as well as not quite enough answer social. Digital transformation does not Again only utilized For increase efficiency operational and productivity company, but also started used For support settlement various problem social and economic challenges faced society. One of the fastest growing technology in a number of year final is Artificial Intelligence (AI), namely enabling technology system computer carry out the process of analysis, learning, decision making decisions and predictions based on available data. Ability the making AI as one potential innovation give contribution big in support development economic and social in a way sustainable (Arsenio et al., 2024).

On the other hand, the implementation Corporate Social Responsibility (CSR) has experience significant development. CSR does not Again viewed only as form concern company to environment social environment around it, but rather has become part important from corporate strategy in create mark

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economic and social in a way simultaneously. The company at the moment This sued For No only produce profit economy, but also provides contribution real to improvement welfare society and development area. Changes paradigm the push company For develop more CSR programs effective, precise targets, and able to produce impact term long for public (Amira & Nasution, 2023).

Although However, the implementation of the CSR program is still ongoing face various challenges. Many CSR programs have not yet been implemented. capable give optimal impact because lack of planning based on needs real society. In Lots case, company Still use a holistic approach general and administrative so that the program is executed No fully in accordance with characteristics social and economic public recipient benefits. In addition, the program evaluation process is often only focus on quantity activities carried out or the amount of funds distributed without measure impact social and economic outcomes in a way comprehensive (Carroll, 2021).. Condition the cause effectiveness of CSR programs in support development economy area Not yet can achieved in a way maximum

As the number of complexity problem social and economic needs to a more approach innovative in implementation of CSR becomes the more important. In context This, AI offers various abilities that can utilized For increase The quality of CSR programs. This capability is also in line with various research findings showing that AI can improve operational efficiency, support data-driven decision-making, and optimize business development strategies and community economic empowerment (Arsenio et al., 2024) . Through the use of AI, organizations can design programs that are more adaptive to the needs of beneficiaries and changes in the socio-economic environment. deep data analysis amount big data analytics, AI is capable of help company identify need public in a way more accurate, mapping potential economy local, determine program priorities, as well as do monitoring and evaluation in a way sustainable. Ability the allows company take more decisions objective and based proof so that the program is executed own opportunity more big For produce real benefits for public (George et al., 2024) .

The use of AI in CSR programs also has strong relevance with effort development economy region. Economic development area No only determined by availability source Power nature and investment, but also by the ability public in access information, develop skills, as well as utilise technology For increase productivity economy. In the digital economy era, technology be one of factor the main determining factor Power competition something area (Faradillah et al., 2023). Therefore that, the integration of AI in CSR programs can become supporting instruments strengthening capacity community, MSME development, improvement quality source Power humans, as well as creation opportunity economy sustainable new (Nambisan et al., 2019)

The use of AI also has the potential to strengthen community economic empowerment programs, which are the focus of various corporate CSR activities. AI technology can help Micro, Small, and Medium Enterprises (MSMEs) improve operational efficiency through business process automation, inventory management, data analysis, and chatbot-based customer service. Furthermore, AI enables businesses to more accurately understand consumer preferences through data analysis, thus supporting more effective marketing strategies and increasing business competitiveness. The use of AI also encourages product innovation, digital marketing content development, and expanded market access, ultimately contributing to increased productivity and sustainability of community businesses. Therefore, integrating AI into CSR programs focused on MSME development can be a strategy for sustainably strengthening regional economies (Freeman et al., 2021).

In addition to providing great opportunities, the implementation of AI in CSR programs also creates various challenges that need to be overcome attention. Utilization technology AI- based requires support digital infrastructure, availability of quality data, and source Power human beings who have Adequate competencies. Findings (George et al., 2024) show that the implementation of AI in the MSME sector also faces obstacles in the form of high initial investment costs, the need for human resource training, data security risks, and regulatory uncertainty governing the use of this technology . In addition, that, the use of AI also gives rise to various issue related ethics, data privacy, security information, and the potential for algorithmic bias that can influence justice in implementation of social programs. Therefore that, the application of AI in CSR is not only need readiness technology, but also requires good governance so that the resulting benefits can felt in a way evenly distributed by the community (Mehrabani et al., 2022).

Various study show that AI has potential big in support achievement objective development sustainable through improvement efficiency use source power, expansion access to information, as well as strengthening capacity public in face change economic and social developments are increasingly dynamic(Nambisan et al., 2019).. However Thus, the study which is special discuss utilization of AI in CSR programs for support development economy area Still relatively limited, especially in context integration between technology, responsibility answer social companies, and empowerment economy society. In fact, understanding about relatedness third aspect the become important For produce a more effective CSR implementation model adaptive to development technology and needs future development.

Based on description said, the article This aim For analyze utilization Artificial Intelligence in the CSR program as instruments that can increase effectiveness implementation not quite enough answer social company at a time support development economy area. Analysis done with study the role of AI in CSR program transformation, its contribution to empowerment economy community, its support to development economy area, as well as various opportunities and challenges that arise in its implementation. With thus, the article This expected can give contribution conceptual in development CSR-based studies technology at a time become reference for companies, government and stakeholders interest other in designing more development programs innovative, inclusive, and sustainable.

Development digital technology has be one of factor the main thing that changes pattern activity economic, social, and development in various countries. Progress technology No Again only functioning as tool supporters operational, but has develop become instrument strategic that influences productivity, efficiency, and quality taking decision. In the middle increasing complexity problem development, ability For manage and utilize data effectively effective become increasing needs important. Therefore that, various innovation technology Keep going developed For help organizations, government, and society in face challenge increasing development dynamic.

One of innovations that are experiencing development rapidly is Artificial Intelligence (AI) or intelligence artificial. Technology This allows system computer conducting learning processes, data analysis, introduction patterns, as well as produce predictions that can be used as base taking decisions. AI capabilities in processing data in amount big in a way fast and accurate make it as lots of technology utilized in various sectors, such as industry, health, education, finance, to service public. Utilization technology the show that AI is not only functioning For increase efficiency operational, but also has potential For help finish various problem social and economic through a more approach data -based and measurable (Novrizal & Prasajo, 2023).

In Indonesia, development economy area Still face various challenges that require attention seriously. Although growth economy national show positive developments, benefits development Not yet fully felt in a way evenly distributed throughout area. Differences level development interregional, low productivity part perpetrator business local, limitations access to technology and information, as well as Not yet optimally utilization potential economy area become a number of influencing factors ability public in increase welfare. In addition, the development The digital economy which is developing very quickly is also creating challenge new for community and actors business that has not been own adequate capacity For adapt with change the (OECD, 2023).

Economic development area basically No only aim increase growth economy, but also creates chance work, strengthen Power competition society, reducing gap social, as well as increase quality life in a way sustainable. For reach objective mentioned, it is necessary involvement various parties, both government, society, and sector private sector. Collaboration inter-actor development become important Because problem economy area are often multidimensional and not can completed only through One approach. In context this company own position strategic Because besides play a role as perpetrator economy, the company also has source power that can utilized For support development the surrounding community (Porter & Kramer, 2011).

The role of the company in development social and economic realized through implementation Corporate Social Responsibility (CSR). The concept of CSR is evolving from just activity philanthropy become form not quite enough answer company in create mark social, economic and environmental in a way sustainable. Through CSR programs, companies expected capable give contribution to improvement

welfare community, development capacity source Power human, empowerment economy local, as well as preservation environment. With Thus, CSR does not only become instrument For fulfil obligation social company, but also become part from development strategies that can create harmonious relationship between companies and communities (R et al., 2024).

Although continuous CSR implementation experience development, effectiveness of the program being implemented Still become challenge in various practice company. Many programs are designed based on approach general without supported by deep understanding about condition social and economic society. As a result, the activities carried out often less in accordance with need real public or Not yet capable give sustainable impact. In addition, the success of the CSR program is still often measured based on amount activities carried out or the amount of funds distributed, not based on change successful social and economic realized. Condition This show the need a more approach innovative so that CSR programs can give more optimal benefits for development area.

Development digital technology opens up opportunity For increase quality implementation of CSR programs through utilization various instrument data -driven. AI capabilities in collect, process, and analyze information allows company get greater understanding comprehensive about need community, potential economy local, as well as various influencing factors success a program. Information the can used For help company determine program priorities, identifying group right target, allocate source Power in a way more effective, and evaluate impact of the program in general sustainable. With Thus, the process of taking decision in implementation of CSR becomes more objective, measurable, and capable produce more benefits big for public (Schwab, 2017).

In addition to supporting program planning and evaluation, AI also has potential For strengthen activity empowerment economy society. Technology This can utilized For help perpetrator business local understand market needs, developing digital marketing strategies, increasing efficiency operational business, as well as identify opportunity appropriate economy with characteristics Regional research (UNESCO, 2021) shows that the use of AI in MSMEs can support operational efficiency, marketing personalization, product innovation, and digital content development , which can increase business competitiveness in the digital economy era. In term length, utilization technology the can help increase productivity community, strengthening Power competition business local, as well as create ecosystem better economy adaptive to change. Ability the making AI as one potential instruments support achievement development better economy inclusive and sustainable (Vinuesa et al., 2020).

Need will approach further development adaptive the more important along with change structure global economy that leads to economic based knowledge (knowledge-based economy). In conditions said, the ability something area in utilise technology, information and innovation become determining factors level Power competitiveness. Regions that are capable of integrate technology to in activity the economy tend own more opportunities big For increase productivity, attractive investment, as well as create chance more work wide. On the other hand, the limitations access to technology can widen gap development and hinder the transformation process the economy is currently ongoing.

Utilization technology intelligence artificial also has strong relevance with effort realize development sustainable. AI capabilities in increase efficiency use source power, expand access to information, as well as support taking more decisions accurate can give contribution to various aspect development social and economic (Schaefer et al., 2021). Therefore that, integration digital technology in various empowerment programs public the more viewed as needs, not just choice, especially in face challenge increasing development complex and dynamic (Vinuesa et al., 2020)

Challenge development economy regions in the era of digital transformation demand presence a more approach innovative in connect business interests with need society. Success a social program No Again only measured from size source transmitted power, but also from his abilities create change real, sustainable and appropriate economy with need society (Agustina, 2016). In context mentioned, utilization technology data -based to be the more important Because capable increase quality planning, implementation, and evaluation of the program being implemented. However Thus, the discussion about integration technology intelligence artificial in activity not quite enough answer social development - oriented companies economy area Still Not yet Lots get attention. In fact, synergy between innovation

technology and empowerment programs public potential produce a more sustainable development model adaptive, effective and sustainable in face dynamics modern economy.

2. METHODS

Study This use approach qualitative with method studies literature (library research) for study utilization Artificial Intelligence (AI) in Corporate Social Responsibility (CSR) programs as effort support development economy area. Approach qualitative chosen Because study This focus on understanding and interpretation to concepts, roles, opportunities, and implications application of AI in CSR activities, not on measurement connection intervariable in a way statistics. Through approach this research make an effort give comprehensive overview about How integration technology intelligence artificial can increase effectiveness of CSR programs in create impact sustainable economy for public (Agustin & Rosdiana, 2022).

Data used in study This is secondary data obtained from various source scientific and relevant documents with topic research. Data sources include journal scientific national and international, books academic, report institution national and international, documents policies, as well as regulation related legislation with Artificial Intelligence, Corporate Social Responsibility, and development economy area. Election source done with consider credibility, relevance, and currency information so that the data used capable support analysis in a way academic and can accountable (Duthler & Dhanesh, 2018).

Data collection techniques were carried out through studies documentation with method identify, trace, collect, and study various literature that has relatedness with focus research. The data collection process begins with determining relevant keywords, then to be continued with search various publication scientific and documents supporters. Literature obtained furthermore selected based on its suitability with objective research, then grouped to in themes related discussions with the role of AI, CSR implementation, and development economy area (Pratiwi et al., 2023).

Data analysis was performed use technique content analysis or analysis content. This technique used For identify, interpret, and synthesize various information obtained from source literature so that can produce greater understanding deep about research topic (Rahmadani et al., 2018). Stages analysis started with data reduction through election relevant information, continued with organizing data based on themes certain, then done interpretation to connection between utilization of AI, implementation of CSR, and development economy area. Analysis results furthermore used For interesting conclusion about potential, benefits, and challenge application of AI in increase effectiveness of CSR programs as instrument empowerment economy public (Brieger et al., 2020).

For increase validity research, conducted triangulation source with compare information obtained from various different references. This process aim For ensure consistency information and minimize possible bias appear from use One source certain (Trivellas et al., 2019). With Thus, the results study expected can give a clearer picture objective and comprehensive about utilization Artificial Intelligence in the Corporate Social Responsibility program For support development economy area.

3. DISCUSSION

Based on results search and analysis to various literature that discusses Artificial Intelligence (AI), Corporate Social Responsibility (CSR), and development economy area, found that utilization of AI in activity social company show increasing development significant in a number of year last. Literature analyzed show that the use of AI is not Again limited to activities operational and business company, but start utilized as instrument For increase effectiveness of social and empowerment programs society. The results of the literature review also show that the development of AI in business has encouraged organizations to utilize technology for data analysis, job automation, and faster and more accurate decision-making. These capabilities provide opportunities for companies to develop more effective, data-driven social programs (Zainal, 2019). The use of AI in social programs is supported by the technology's ability to process and analyze large amounts of data, resulting in more accurate information to support decision-making. A data-driven approach enables organizations to design more effective programs and reduces the risk of errors in determining social program policies and targets (Aritonang & Swondo, 2021).

Analysis results show that there is three form main utilization of AI in CSR programs. First, AI is used in the identification process need public through analysis of social, economic, and demographic data.

Utilization technology This allows company get more information accurate about condition public so the program is designed can customized with need This capability is supported by the use of large amounts of data (big data), which enables organizations to obtain more comprehensive and accurate information as a basis for decision-making. Systematic data analysis can help identify patterns of community needs and improve the accuracy of evidence-based social program planning (Susanti, 2020). A number of study put forward that approach data- based capable reduce risk inaccuracy CSR program targets that have been This be one of weakness in implementation of social programs company (Rojabi, 2018).

Second, AI is utilized in development of empowerment programs economy society, especially in the sector business micro, small, and medium enterprises (MSMEs). Study results show that AI technology can used For help MSME actors in understand market trends, identifying opportunity effort, doing segmentation consumers, as well as develop a more effective digital marketing strategy Effective. Other findings show that the implementation of AI and digital transformation also helps MSMEs improve operational efficiency, strengthen customer relationships, and support more optimal decision-making through sustainable data utilization. This condition encourages increased business competitiveness amidst the increasingly dynamic development of the digital economy (R et al., 2024) . the show that AI has the potential become instrument supporters improvement productivity and power competition business society that becomes CSR program targets.

Third, AI is used in the process of monitoring and evaluating CSR programs. Various literature explain that system AI- based capable do data processing sustainable so that program development can monitored in a way more Objective and measurable. Continuous use of data analysis also allows organizations to obtain real-time information, allowing evaluations to be conducted not only at the end of a program but throughout its duration. This helps companies identify obstacles more quickly and increases the effectiveness of data-driven decision-making. The study also showed that utilizing real-time data analysis allows for continuous evaluation, enabling organizations to detect problems more quickly, reduce program inefficiencies, and make more responsive policy adjustments based on available data. ability analysis said, the company can identify level program success, detecting obstacle implementation, as well as do adjustment policy in a way more fast compared to method evaluation conventional (Novita, 2018).

In addition to identifying form utilization of AI in CSR programs, results analysis literature also shows existence connection between implementation digital technology with improvement quality development economy area. Some study explain that utilization technology in empowerment programs public contribute to improvement capacity source Power human, productivity business local, access information economy, and expansion Market opportunities. Various studies also show that digital transformation can create new business models, increase business productivity, and expand collaboration opportunities among economic actors. These impacts contribute to strengthening local economic ecosystems, making them more adaptive and competitive. Impact the show that digital technology can play a role as catalyst in accelerate the development process better economy inclusive and sustainable (Guaita Herdofza, 2022).

On the other hand, the results the analysis also found a number of challenges that can influence effectiveness Implementing AI in CSR programs. Challenges the covering limitations digital infrastructure, low level literacy technology society, limitations source Power human beings who have competency in the field of AI, as well issue Data protection and privacy. Furthermore, the quality of AI-based decision-making is also influenced by the quality of the data used, the organization's analytical capacity, and the availability of supporting infrastructure. Therefore, sound data management is a crucial factor in ensuring the effectiveness of digital technology implementation in social programs and community empowerment. the show that success implementation of AI in CSR programs is not only determined by availability technology, but also by readiness environment social, economic, and institutional support its use (Bharadwaj & Yameen, 2021).

Based on overall the literature analyzed, can identified that the use of AI in CSR programs has potential For increase effectiveness program planning, strengthening the empowerment process economy society, as well as increase quality program monitoring and evaluation. Findings This show that integration technology intelligence artificial in activity not quite enough answer social company can be one of approach innovative in support development economy more areas adaptive, data -driven, and sustainable.

Discussion

Artificial Intelligence as an Instrument for CSR Program Transformation

Research result show that utilization Artificial Intelligence (AI) has the potential transform implementation Corporate Social Responsibility (CSR) from a holistic approach administrative going to a more approach strategic, measurable, and data -driven. During In this case, the implementation of CSR is often oriented towards fulfilling obligation company through distribution help social or implementation activity certain without supported by analysis need deep community. As a result, various programs are implemented Not yet fully capable produce impact sustainable social and economic development.

The use of AI provides opportunity for company For increase quality program planning through more data processing comprehensive information about condition social economy society, level welfare, characteristics business local, up to potential development area can analyzed in a way more systematic so that decisions taken become more objective. In context this, AI does not only functioning as tool technology, but also as instrument strategic that helps company understand need public in a way more accurate. With Thus, the CSR program is designed own opportunity more big For reach expected goals Because based on conditions real faced public (Apriani, 2022).

Findings is also in line with with stakeholder theory which emphasizes that company own not quite enough answer to all over stakeholders interests affected by activities business. Society is one of the stakeholders interest the main one whose existence greatly influences sustainability company. Therefore that, ability company in understand need public become factor important in determine effectiveness CSR implementation. Through AI, the identification process need the can done in a way more deep so that connection between companies and communities can woke up based on greater understanding Good to interests of each party (Mustofa et al., 2020).

Integration of Artificial Intelligence and the Concept of Creating Shared Value in CSR Programs

Development the modern CSR concept shows existence shift from approach philanthropy going to approach creation mark together (Creating Shared Value or CSV). In approach this company No only sued For give benefit social to society, but also creates mark economy that can support sustainability company That itself. In other words, success company and welfare public viewed as two things that are mutually exclusive related and unrelated can separated ("Keterlibatan Swasta (CSR) Dalam Pembiayaan Pendidikan," 2023).

The use of AI can strengthen implementation CSV concept because technology This allows company identify point meeting between need society and interests business company. Through more data analysis accurate, company can designing a capable CSR program finish problem social at a time support creation environment more effort productive. For example, a company that has relatedness with sector agriculture can leveraging AI for help farmer increase productivity through utilization digital technology. Improvement productivity the No only give benefit for farmers, but also strengthen chain supply company in term long (Hasnati et al., 2020).

In perspective development sustainable, the integration of AI and CSV concepts shows that CSR is not Again viewed as cost company, but rather as investment socially capable produce benefit economic and social in a way simultaneously. Therefore that, the use of AI can become means For strengthen contribution company in development economy area at a time increase Power competition company in the middle change environment growing business dynamic.

The Role of Artificial Intelligence in Community Economic Empowerment

Empowerment economy public is one of the objective main implementation of CSR, especially in support development economy area. Research results show that AI has great potential in increase effectiveness of empowerment programs economy Because capable expand access public to information, knowledge, and opportunities the previous economy difficult reachable.

One of groups that can get benefit significant from the use of AI is business micro, small, and medium enterprises (MSMEs). During This, many MSMEs face various constraint like limitations market information, low ability digital marketing, as well as lack of access to technology. AI can help overcome constraint the through analysis behavior consumers, predictions market trends, and provision more business strategy recommendations right. With existence support more information accurate, perpetrator business can take more decisions effective in develop his efforts.

In addition, AI can also be utilized in the improvement program capacity source Power human. System learning AI- based enables the training process customized with the needs and abilities of each individual. The approach This give opportunity for public For get more skills relevant with needs of the world of work and development digital economy. In term length, increase quality source Power man will impact positive to productivity society and power competition economy area (Anatan, 2009)

Artificial Intelligence as a Support for Data-Based Decision Making

Retrieval the right decision is factor important in determine success of CSR programs. Research results show that one of superiority The main AI is his abilities in support the decision-making process decision data - driven decision making capability the allows company reduce level subjectivity in determine program priorities and group target.

In in practice, the company often face limitations information when determine the type of program that will be implemented. AI can help overcome problem the through more detailed analysis of social, economic, and environmental data comprehensive. The information generated can used For determine need the most pressing community, identifying potential risks, as well as predict level success a program before implemented.

Another advantage that AI has is his abilities in do monitoring and evaluation in a way sustainable. Through system data- driven, enterprise can measure program development in real time and perform repair if found obstacle in its implementation. With Thus, the effectiveness of the CSR program can be Keep going improved through a more thorough evaluation process objective and systematic (Phillips et al., 2019).

Contribution of Artificial Intelligence to Regional Economic Development

Economic development area basically aim increase welfare public through creation field work, improvement productivity economy, and strengthening Power competition area. Research results show that utilization of AI in CSR programs can support achievement objective the through various mechanism.

AI capabilities in analyzing data allows identification potential economy local done in a way more accurate. Information the can used For determine sector economy that has opportunity development the biggest so that source power possessed company can directed at programs that provide most significant impact for community. Approach This help create further development effective Because interventions carried out based on the characteristics and needs of each region.

More Furthermore, the use of AI can also speed up transformation economy area going to economy based knowledge (knowledge-based economy). In modern economy, power competition an area does not Again only determined by the source Power nature, but also by ability public in access and utilize technology. Therefore that, the integration of AI in CSR programs can become one of the strategies for increase capacity innovation and productivity economy public in a way sustainable (Biswas et al., 2019).

The Impact of Artificial Intelligence on the Sustainability of CSR Programs

Sustainability is aspect important in evaluate success an effective CSR program No only capable give benefit in term short, but also creating changes that can be made maintained in term long. Research results show that AI has significant role in increase program sustainability through ability continuous monitoring and analysis.

Through data processing carried out in a way continuously, the company can understand change condition social and economic public after the program is implemented. Information the allows company do adjustment to the program in progress walk so that benefits generated still relevant with need community. Approach This different with the conventional CSR model which is generally end after help or activity finished implemented.

In addition, the use of AI also encourages creation independence public through improvement access to information and technology. When society capable utilise technology in activity economy they, dependence to help external will reduced. Condition the become indicator important that the empowerment program has succeed create sustainable impact (Kim et al., 2018).

Multi-stakeholder Collaboration in AI Implementation for Regional Development

Success utilization of AI in CSR programs is not can achieved only through role company. Implementation technology need support from various the party that owns interest to development area.

Therefore that, collaboration between companies, governments, institutions education, community society and sectors private other become very important factor.

Government play a role in provide regulations and supporting digital infrastructure utilization technology. Educational institutions own not quite enough answer in increase competence public through relevant education and training with development technology. Meanwhile that, society play a role as recipient benefit at a time partners in program implementation.

Collaboration the in line with draft quadruple helix that emphasizes importance synergy between government, academics, business world, and society in push innovation development. Through Work good same, the implementation of AI in CSR programs can produce greater impact extensive and sustainable to development economy area (Lim & Jiang, 2021)

Challenges and Limitations of Utilizing Artificial Intelligence in CSR Programs

Although offer various benefits, implementation of AI in CSR programs is still face a number of challenge. One of the challenge main is the digital divide that still exists occurs in various area. Limitations internet access, infrastructure technology, and digital devices cause No all over public own equal opportunity For utilise technology the.

Challenge next related with quality source Power human. The low level digital literacy can reduce the effectiveness of programs that utilize AI because public Not yet own adequate capabilities For access and use technology optimally. Therefore that, the increase digital competence is necessary become part important in implementation of CSR programs based on technology.

Apart from the aspect technical issues ethics and data protection are also increasing attention important. Use of community data in amount big cause risk related privacy, security information, and potential algorithm bias. Companies need to ensure that the entire process of data collection and utilization is carried out in a way transparent and responsible answer for trust public still awake (Özyol, 2020).

Prospects for Utilizing Artificial Intelligence in the Future of CSR

Development AI technology is increasingly rapidly show that his role in the CSR program will Keep going increase in the future. Ability increasingly sophisticated data analysis advanced allows company develop more programs adaptive, predictive, and responsive to change need community. CSR programs do not Again only focused on solving current problem happen, but also capable of anticipate various challenge possible social and economic appear in the future.

In term long term, the use of AI has the potential push the birth of a more CSR model innovative and based sustainability. Integration between technology, empowerment society and development economy area can create ecosystem further development effective in increase welfare society. Therefore that, success implementation of AI in CSR programs is not only depending on development technology That itself, but also on readiness institutions, regulations, sources Power human beings, and commitment all over stakeholders interest in utilise technology For objective sustainable development.

Critical Analysis of the Advantages and Limitations of Utilizing Artificial Intelligence in CSR Programs

Utilization Artificial Intelligence (AI) in Corporate Social Responsibility (CSR) programs offers various opportunities that can be increase effectiveness and quality implementation of social programs company. However Thus, the use of technology this also gives rise to a number of challenges and limitations that need to be considered in a way critical. Therefore that, analysis to utilization of AI is not only need see the benefits generated, but also various possible risks appear so that implementation technology the can done in a way responsible responsible and sustainable.

From the side advantages, AI has ability For increase accuracy in the identification process need society. In the approach conventional, company often face limitations information so the program is designed Not yet fully in accordance with condition society that becomes targets. AI enables company processing social, economic and demographic data in amount big so that need public can mapped in a way more Details. Conditions This help company reduce possibility error in determine program priorities and improve efficiency use source the power possessed. With Thus, the CSR program is implemented potential

produce greater impact big compared to an approach that only depend on observation or evaluation subjective (Zhao et al., 2021)

In addition to improving accuracy, AI is also capable speed up the retrieval process decision. Ability system For analyze data automatic allows company get required information in relative time short. In continuous environment change, speed taking decision become factor important Because need public can develop with fast. Because of that that, AI can help company respond various problem social in a way more adaptive and appropriate time.

Superiority other is AI capabilities in support measurement impact of CSR programs. During this, a lot company experience difficulty in evaluate effectiveness of the program because limitations method evaluation used. AI enables the monitoring process done in a way sustainable through analysis of the data obtained during program implementation. Evaluation results the can used as base For do program improvement and development during the period next so that quality CSR implementation can Keep going improved (Meng et al., 2023).

Although own various advantages, the use of AI in CSR programs also faces a number of necessary limitations get attention. One of the most frequent problems discussed in literature is potential emergence algorithmic bias or algorithm bias. Algorithm bias happen when AI system generates decision or recommendations that tend to profitable or harm group certain consequence quality of data used in the training process system. If the data is used No represent condition public in a way comprehensive, then results AI- generated analysis has the potential produce poor decision fair. In CSR context, conditions the can cause group public certain No get the benefits that should be they accept although own the same needs or even more big compared to group other (Zainuddin Rela et al., 2021).

The problem of algorithm bias show that AI is not fully technology neutral. The results provided by the system are highly dependent on the quality, completeness, and representativeness of the data used. Therefore that, the company No can fully hand over the retrieval process decision to AI system without do verification and consideration human. The role of humans still required For ensure that results the resulting analysis technology in accordance with principle justice social and goals main CSR program.

Limitations other related with digital divide which still exists happens in many area. The use of AI in general need access to infrastructure adequate technology, such as internet networks, digital devices, and systems data management. However, it does not all area own level the same digital readiness. Urban areas tend own access more technology Good compared to area rural or remote areas. Conditions This potential create inequality new Because benefit technology more easy enjoyed by the group the community that has own access to technology compared to society that still face limitations digital infrastructure (Merkl-Davies & Brennan, 2022).

Besides the gap infrastructure, level digital literacy of the community also becomes influencing factors success Implementation of AI in CSR programs. Advanced technology No will give optimal benefits if users No own sufficient ability For take advantage of it. Therefore that, the success of the AI- based CSR program is not only depending on sophistication the technology used, but also on readiness source Power human beings who become recipient benefits of the program. Conditions This show that investment in development capacity public need walk along with investment in technology.

From the aspect economy, costs AI implementation is also becoming challenges that are not can neglected. Development AI systems require relative investment big, good in form device hard, device software, data management, and power experts who have competence special. Big company Possible own ability financial For adopt technology said, but the same condition Not yet Of course owned by the company scale medium or small. As a result, there is possibility that utilization of AI in CSR only carried out by the company certain ones that have source adequate power, while company other Still use approach conventional. Difference ability the can influence quality and effectiveness implementation of inter-company CSR programs (Dmytriiev et al., 2021).

Aspect ethics also becomes an increasingly pressing issue important in utilization of AI. Use of technology data- based requires the process of collection, storage, and analysis information public in amount big. If No managed with good condition the can cause risk violation privacy and data misuse. In context of CSR programs, society often in a vulnerable position Because they become object data collection for various program interests (Berger-Wallisier & Scott, 2018). Therefore that, the company own not quite

enough answer For ensure that all data management processes are carried out in a way transparent, safe and compliant with principle protection right individual (Montalbán-Domingo et al., 2022).

More furthermore, concerns also arise that over - dependence against AI can reduce sensitivity social in implementation of CSR programs. Basically, CSR programs do not only related with efficiency and accuracy taking decisions, but also concerns aspect empathy, values social, and understanding to condition people who often do n't can fully translated to in data form. AI is indeed capable identify patterns and produce predictions, but technology the Not yet capable replace fully ability man in understand dimensions social, cultural, and emotional aspects inherent in life society (W et al., 2021). Therefore that, the use of AI should be positioned as tool supporters taking decision, not as replacement role man in determine direction and objectives of social programs (Matala, 2022).

Based on analysis said, can understood that the use of AI in CSR programs has characteristics that are paradoxical. In one side, technology This capable increase efficiency, accuracy, and effectiveness program implementation (Shandy Utama, 2018). However, on the other hand, AI also presents risk new related with algorithm bias, digital divide, costs implementation, data privacy, and potential decrease dimensions humanity in implementation of social programs. Therefore that, success implementation of AI in CSR requires balanced approach between innovation technology and values social. Companies need to ensure that continued use of AI goal - oriented main CSR, namely create benefit sustainable social for society. With Thus, technology No only become instrument improvement efficiency, but also to be means For strengthen justice, inclusivity, and sustainability development economy area.

4. CONCLUSION

- a. Artificial Intelligence (AI) acts as a more strategic and data-driven CSR transformation instrument, enabling companies to design more targeted social programs compared to conventional CSR approaches that tend to be solely oriented towards activities and aid distribution.
- b. The use of AI improves the quality of CSR program planning through more comprehensive social, economic, and demographic data analysis capabilities, so that community needs can be identified more accurately.
- c. The integration of AI with the concept of Creating Shared Value (CSV) strengthens the relationship between a company's social and economic goals, so that CSR programs not only provide benefits to society but also support the company's business sustainability.
- d. AI has a significant contribution to community economic empowerment, particularly through increased access to information, digital skills development, and support for strengthening the capacity of MSMEs as drivers of the regional economy.
- e. AI's ability to support data-driven decision-making helps companies reduce subjectivity in CSR implementation, allowing for more effective and efficient resource allocation.
- f. The use of AI can improve the quality of monitoring and evaluation of CSR programs because it allows for the measurement of program impacts in a sustainable manner and based on more objective indicators.
- g. The implementation of AI in CSR programs has the potential to support regional economic development, especially through identifying local economic potential, increasing community productivity, and accelerating the transformation towards a knowledge -based economy.
- h. The success of AI utilization in CSR is greatly influenced by multi-stakeholder collaboration involving companies, government, academics, community groups, and the private sector in building a digital ecosystem that supports regional development.
- i. Despite its many advantages, the use of AI still faces various limitations, such as the digital divide, low technological literacy, high implementation costs, and limited infrastructure in some areas.
- j. The use of AI in CSR must consider aspects of ethics, transparency, and social justice because the risks of algorithmic bias, data misuse, and reduced sensitivity to social conditions can reduce the effectiveness and legitimacy of the programs being implemented.

Suggestion

- a. Companies need to gradually integrate AI technology into CSR programs, especially at the planning, implementation, and evaluation stages of the program so that the benefits of technology can be optimally utilized without neglecting the social aspects of society.
- b. The government needs to strengthen digital infrastructure and expand access to technology in the regions so that the benefits of AI utilization in CSR programs can be felt more evenly by all levels of society.
- c. Improving digital literacy among the public needs to be part of AI-based CSR programs so that the public has sufficient skills in utilizing technology to support their economic and social activities.
- d. data governance principles, including privacy protection, information security, transparency of data use, and mitigation of algorithm bias risks in every AI implementation.
- e. Collaboration between companies, government, universities, and communities needs to be strengthened to create innovative CSR programs that are more inclusive, sustainable, and capable of providing a real impact on regional economic development.
- f. Further research is recommended to use an empirical approach or case studies so that it can directly measure the effectiveness of AI utilization in CSR programs in various industrial sectors and different regions.
- g. Companies need to ensure that AI is used as a decision-making support tool, not as a substitute for human judgment, so that the values of humanity, empathy, and social justice remain the main foundation in implementing CSR programs.
- h. The development of AI ethical policies and guidelines in CSR activities needs to be continuously carried out to ensure that technological innovation is in line with the principles of sustainable development and social welfare.
- i. AI-based CSR programs should focus on sectors with high economic impact, such as MSME empowerment, digital education, job skills development, and strengthening local economies.
- j. The use of AI in CSR should be directed towards creating long-term community independence so that the programs implemented do not only provide short-term benefits but are able to produce sustainable social and economic changes.

Research Suggestions

- a. Further research is recommended to use a quantitative approach by involving respondents from companies, beneficiary communities, and local governments to empirically measure the influence of the use of Artificial Intelligence on the effectiveness of CSR programs and regional economic development.
- b. Future research can use case study methods on companies that have implemented AI in CSR programs so that a more in-depth picture can be obtained regarding the implementation process, challenges, and resulting impacts.
- c. Further research needs to compare AI-based CSR programs with conventional CSR programs to determine the differences in the levels of effectiveness, efficiency, and sustainability of the benefits provided to the community.
- d. Future studies can broaden the scope of research by involving various industrial sectors, such as mining, banking, manufacturing, plantations, and technology, so that a more comprehensive understanding of the application of AI in various characteristics of CSR programs can be obtained.
- e. Further research is recommended to examine the relationship between the use of AI and improving the performance of MSMEs as an indicator of regional economic development, considering that the MSME sector has a strategic role in job creation and local economic growth.
- f. Future research needs to develop a model or framework for implementing AI in CSR that can be used as a guideline for companies in designing, implementing, and evaluating programs systematically.
- g. Further studies can examine the influence of community digital literacy on the success of AI-based CSR programs to determine the extent to which community readiness influences the effectiveness of technology utilization in economic empowerment activities.

- h. Future research should also examine ethical aspects, data privacy, and algorithmic bias in AI implementation in CSR programs to produce recommendations for fairer, more transparent, and more responsible technology governance.
- i. Further research can use a longitudinal or long-term approach to observe the impact of AI utilization in CSR programs on changes in social and economic conditions in society in a sustainable manner.
- j. Future studies are recommended to integrate the perspective of sustainable development (Sustainable Development Goals or SDGs) to measure the extent to which the use of AI in CSR programs can contribute to the achievement of economic, social, and environmental development goals in an integrated manner.

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