ARTICLE

Evaluation of modern technology on human resources management and sustainable development in Pharma industries

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ABSTRACT

The essential purpose of this research study is determine the impact of modern technology on human resources management and sustainable development. This research study totally based on primary data analysis for measuring data develop different questions related to the modern technology and human resource management also sustainability development. For determine the research data used smart PLS software and generate different results such as smart PLS Algorithm, R square, F square, the discriminant validity, reliability, and present the total effect in between independent and dependent indicators. According to the overall research study the modern technology included custom software development, virtual reality, augmented reality these are all consider as independent variables. the human resource management is main dependent variable its included training management, organization change management, and performance management these are sub parts of dependent variables. the sustainability development is another dependent variable its present the effect with modern technology. According to the overall research study the result founded that the human resource management shows positive and significant effect with modern technology. The virtual reality and augment reality directly relate with human resource management and its performance in organization.

INTRODUCTION

The new and revolutionary form of technology has changed the world in no time. No one in the present world can deny the importance of technology. Every field needs technology for its development and advancement. The use of technology in the field of resource management holds great significance. The process of resource management includes the use of technology for the allocation of various resources to the people for planning a project. Resource management plays a very important role in improving the efficiency of any system by providing a workable schedule for managing resources. There are various types of resource management technology and each type has its place in society. These types include forest resource management, mineral

resource management, wildlife resource management, etc. When these types of resource management work with the help of modern technology they result in the sustainable development of any economy.

Many resource management industries use technology for the development of their pharma industry .in using technology the company first uses interest sources for recruitment. In this method, companies post online ads for the various job posts and then receive the E-mails of people in electronic format. With the use of technology in the recruitment process companies save their time and money. The online process of recruitment is much easier as it helps facilitate the selection process of potential employees. The second step in the resource management process is the selection of the candidates by shortlisting the candidates. Then interviews on video calls and telephone calls are taken for the final selection of the eligible candidates. Then the third step is the training of the selected employees with the help of multimedia. Then the fifth step includes the use of an electronic system by the employees for improving their performance. The electronic training system on one hand will help the company to minimize the cost of training staff and on the other hand, this system will help to increase the productivity of the employees. All these steps are performed using the modern form of technology.

In many HRM department of pharma industries, Artificial intelligence is used for making the functioning of these management companies better. This technology plays a very important part in the retention of employees. The computer activity of an employee and his browning process is easily analyzed by using artificial intelligence. This software is based on an intelligence system so it easily detects user behavior and informs the management whether the employee is planning to leave the job or not. Many management systems also use virtual and augmented reality programs to assess the employee's behavior. With the use of virtual and augmented technology, the management can easily analyze the employee's thinking process. Also, the quality of training programs improves with the help of visual as well as audio presentations. The technology of virtual and augmented technology is also used by the resource management team during the process of the selection of candidates. One more use of technology programs in resource management is cognitive technology. This application detects human brain functions using a different process like data mining as well as a natural processing system. Cognitive technology is mainly

based on artificial intelligence that helps to connect the human brain with the technology for promoting machine learning.

The most important factor required for sustainable resource management is human resource management. By managing the process of human resources the development of a sustainable economy is possible. The best way to achieve sustainable development is by producing enough resources to meet the needs of the present generation. In the present world, the other possible ways for achieving economic stability include the use of innovative technologies in resource management industries, improving the environmental and social resources for the better management of resources, and improving the correlation between digital platforms and organizational innovation. All these factors will help in sustainable development. In the recent few years, the use of technology in managing various resources has increased. For example, during covid-19 the use of technology was at its peak in all the resources management industries. The HRM department of pharma industries have provided a huge social and economic aid to the world during the time of covid-19 by using technology. Now, Post the covid-19 pandemic many companies around the globe are still using the new technology for making the developmental process of their industries increase.

The digitalization of the present world is all because of technology. This digitalization is the key to all the innovative programs going on in the world. All the industries of the world working with the help of technology are now regarded as the 4.0 industries. These pharma industries work by producing the substitute for various products so that these substitutes will help when there is a shortage in the real products. The new industries revolutionized their products by recycling them and changing their form by using innovative technology. The main purpose of 4.0 pharma industries or Fourth World Revolutionized companies is to improve the process of sustainable growth of the economy. One more factor that is responsible for a sustainable development besides technology is the hard work of the employees of the resource management company. If the employees of any company are working by giving their heart and soul to it then ultimately that company can make progress. In all the developmental and sustainable processes, the most important role is played by the government of the country. The role of the government is to ensure that these companies are working without any restrictions. Any restriction imposed on the resource management companies will

ultimately result in a decrease in the development of a sustainable economy. So, for the stability of the economy, the government needs to let the resource management company work freely and confidentially without any restrictions.

Research objectives:

The research objectives include the study of different technological programs for the proper working of resource management companies. The role of resource management companies in the development of a sustainable economy has also been discussed in the research paper.

Literature Review:

Information technology, sustainability, and sustainable development:

From recent many years, information technology as a modern technology has gained its popularity in all fields including business, education, pharma industries, etc., therefore, the modern information technology seems necessary for the sustainability and sustainable development of the country [1]. In this research article, author investigated that sustainable development includes two basic concepts including sustainability, and development [2]. According to the researcher, sustainability, and development might have a relationship between them, with both potentially having detrimental effects, whereas various economic theories claimed that there seems no conflict between development and sustainability [2]. Both have direct association such as there would be no sustainability without development and similarly without sustainability there would be no development. Apart from this, sustainable development has ability to provide basic needs to humans, while also achieving equality, integrating environmental protection and development, ensuring cultural diversity and preserving environmental integrity [3]. Whereas the sustainable development concept has evolved over time, its essential concepts and intentions have helped to more moral awareness that is more sensitive to environmental restrictions [3]. Furthermore, it was claimed that the emergence of modern technology has put positive influence on the sustainability or sustainable development [3]. Many organizations have been utilizing modern technology in order to maintain sustainable development. Sustainable development is critical to the functioning of modern enterprises. Sustainability

initiatives enhance firm performance as well as provide a competitive advantage [4]. As a result, an increasing number of businesses increasingly becoming engaged in environmental issues, recognizing that environmental preservation serves as the best business interests. Sustainable HRM may serve as an important factor in environmental management [5]. While Author highlighted that in today's development agenda, the term "sustainability" has now become a widespread term. While its tremendous popularity and pervasiveness over the decades, the term remains ambiguous, with many individuals still asking concerns about its history and meanings as well as what it contains and suggests for sustainable development principles and application [6]. The focus of this research was to investigate the sustainability debate by clarifying the concept and its consequences for human actions and thinking [6]. Furthermore, the applications of internet of things and modern information technology provides various effective strategies in order to enhance the global Human resource management systems more efficiently and effectively in most of the developing countries [7]. with the assist of modern technologies, it seems easy to maintain sustainable development in the country and thus, it has positive impact on country's economy and sustainability. Research claimed that modern technology integration consists of the applications of analytics of things, data integration, local sensing, as well as cognitive action in resource management [7]. Apart from this, researcher highlighted that the development of modern technology including AI artificial intelligence and its significant influence on numerous business sectors demands an analysis of its impact on the accomplishment of the SDGs [8]. In this research, research investigates the impact of AI on HRM, and sustainability [9]. For this purpose, by utilizing qualitative data collection technique, various targets have been selected and researchers discover that AI might promote the achievement of 133 objectives across all targets, but it can also prevent the achievement of 60 targets [10]. Furthermore, present research agendas ignore key characteristics. Rapid progress of AI requires the necessary regulatory understanding and monitoring for AI-based solutions to ensure sustainable development [11]. Furthermore, it was studied that modern technology has been growing rapidly and expanding into new areas of pharma industries, governmental policies, and corporate practices [12]. Moreover, deep learning skills in intelligent systems and automation technology have had significant displacing and empowering effects on industry, society, and governments. They have also been influencing

the wider trends in sustainable development all over the world [13]. Because emergence of artificial intelligence or modern technology affects our world, it may announce a socialist utopia in which humans coexist peacefully with robots, and enhanced working performance by utilizing the applications of automation technology [13].

Information technology and human resource management:

Nowadays, along with the applications of modern information technology in sustainable development, it has various application in human resource management [14]. Many organizations have been utilizing modern technology including information technology, AI technology in order to maintain or manage the resource management [15]. Author investigated the impact of modern information technology on the Human resource management. For this purpose, sample data has been collected from various organization in China, and it was highlighted that modern technology has changed the human's life [15]. It has increased humans' living standards. It has significant positive impact on waste management, tourism, education, industrial sectors [16]. Apart from this, it was studied that many organizations having business experience have recognized the value of modern ICT and IoT techniques in meeting corporate objectives. It not only facilitates in the achievement of company objectives, but it also optimizes business process [17]. Furthermore, researcher highlighted that HRM (human resource management) involves activities including developing, recruiting, training as well as rewarding individuals having better performance in the organization. human resource management must seek for effectiveness in human resource management by ensuring appropriate education programs for the professional and personal development of the organization's workers. [18]. Apart from this, author discussed detail review of the factors affecting HRM and it was claimed that ICT information and communication technology, including the new media, mobile communication, Internet, social networking sites, and many other similar tools, can significantly contribute to the implementation of an organization's personnel policy [19]. In addition, technology development can have a significant influence on an organization's resource management department

[19]. It gives the organization the chance to enhance the performance of its business systems, core competencies, organizational structure, and target markets. Furthermore, author highlight the various applications of information technology in HRM, and to maintain sustainability [20]. By analyzing various applications of AI, ICT, modern emerging technologies, it was described that modern technology might have remarkable influences on the organizations that operate in dynamic environments. Due to which human resources will become more effective and efficient [21]. Therefore, using IT systems for data management and cutting-edge recruitment systems would boost business productivity [21].

Research methodology:

This research study determines the impact of modern technology on human resources management and sustainable development. This research study totally depends upon primary data analysis for measuring the research used open ended and closed ended questions related to the variables. The modern technology is independent variable and human resources management also sustainable development both are dependent variable.
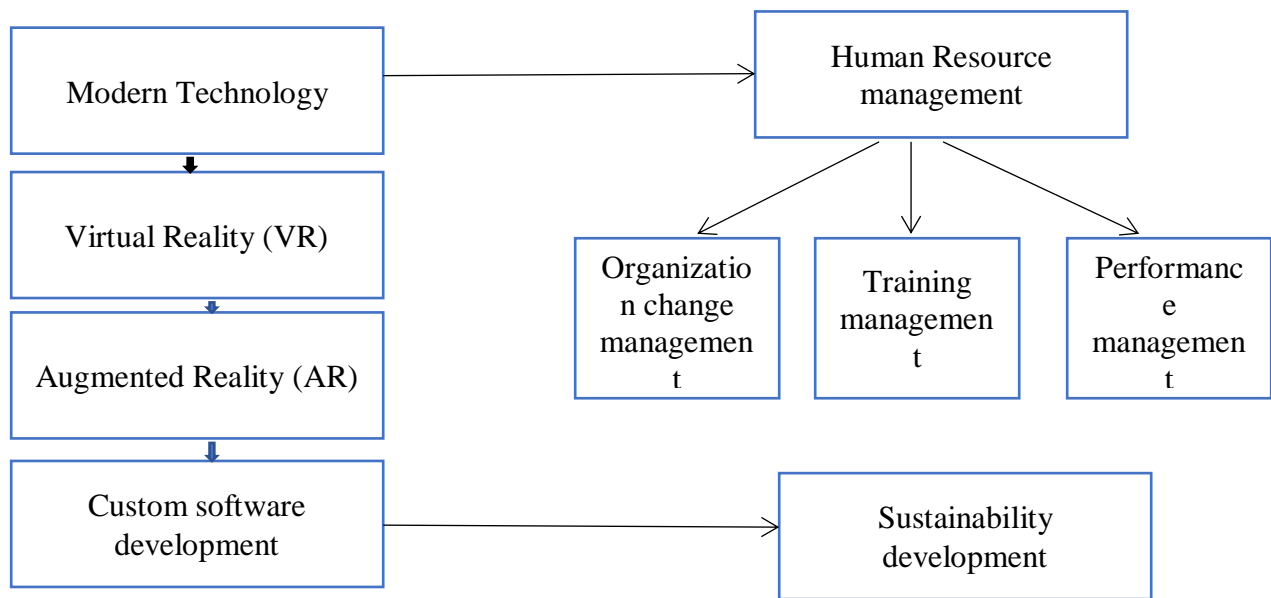
Research Participants:

This research study determines the modern technology effect on HRM and sustainable development. Data collected from human resource departments the employee of human resource management, HR manager, HR specialist, etc. these are all consider as research participants. In this research study develop almost 10 plus questions related to the Human resource management and modern technology these questions fulfill from research participants.

Research Methods, Tools and Techniques:

For measuring the research study used smart PLS software and generate different result in between dependent and independent variables. the indicator correlation coefficient, R square, F square, the model fitness analysis, model selection criteria, outer weighted analysis, also that describe the smart PLS Algorithm model for measuring the effect between them.

Theoretical framework:

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┌─────────────────────┐                    ┌─────────────────────┐
│  Modern Technology  │ ─────────────────► │   Human Resource    │
└─────────────────────┘                    │     management      │
          │                                └─────────────────────┘
          ▼                                    │      │      │
┌─────────────────────┐          ┌─────────────┘      │      └─────────────┐
│ Virtual Reality (VR)│          ▼                     ▼                    ▼
└─────────────────────┘   ┌────────────┐      ┌────────────┐      ┌────────────┐
          │               │Organizatio │      │  Training  │      │ Performanc │
          ▼               │ n change   │      │ managemen  │      │     e      │
┌─────────────────────┐   │ managemen  │      │     t      │      │ managemen  │
│Augmented Reality (AR)│  │     t      │      └────────────┘      │     t      │
└─────────────────────┘   └────────────┘                         └────────────┘
          │
          ▼
┌─────────────────────┐                    ┌─────────────────────┐
│  Custom software    │ ─────────────────► │   Sustainability    │
│    development      │                    │     development     │
└─────────────────────┘                    └─────────────────────┘
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Modern Technology:

Modern technology enables machines to grow increasingly sophisticated, and most manual-control duties can be automated. Modern airplanes are well-known instances of this. Such automation has an irony that should not be disregarded. Modern technology is also delivering tools to assist us modify people's lives and better their situations. These are the persons who can improve their skill by utilizing a cultural instrument. They are more likely to progress in learning new skills and becoming more self-sufficient and successful. Modern technology is all about assuring face-to-face contact, linking you to your healthcare provider, and empowering you by providing you more access and control over the type of treatment and service you receive. Education technology enables virtual attendance, live chat, and real-time face-to-face connection between instructors and students. One may also access previously recorded classes as well as a multitude of additional study materials.

Virtual Reality (VR):

Virtual Reality (VR) is a computer-generated system featuring realistic-looking images and objects that immerses the viewer in their surroundings. This world is viewed by using a Virtual Reality headset or helmet.

Augmented Reality (AR):

Augmented reality is the real-time integration of digital information with the user's environment. In contrast to virtual reality, which produces a completely manufactured world, augmented reality leverages the current environment and attaching fresh information on top of it.

Custom software development:

The process of designing, developing, deploying, and supporting software for a specific group of users, functions, or organizations is known as custom software development. Custom software development, in contrast to commercial off-the-shelf (COTS) software, aims towards a closely specified set of criteria. A software development firm (or team,

depending on the agency) creates specialized software applications, frameworks, and tools to assist in problem solving or achieving a certain goal. One of the most major advantages of customized software creation is that it allows organizations to effectively interface with other systems. Custom software development also enables firms with obsolete systems to simply upgrade their business processes and make the necessary transition to mobile and the cloud.

Human Resource Management:

Human resource management (HRM) is the practice of recruiting, hiring, deploying, and managing personnel in a business. HRM is frequently abbreviated as "human resources" (HR). The most significant resource is human resources, or the individuals who work in the organization. Human resource management is the process of hiring people, training them, rewarding them, setting workplace policies, and devising retention tactics. HR management acts as an intermediary between employee performance and the strategic goals of the organization. Human resource operations have a substantial impact on an organization's success. As a result, human resource management has become a prominent field of study.

Organization change management:

Organizational change management is the process of leveraging change to achieve a successful outcome, and it generally consists of three primary phases: preparation, development, and follow-through. Organizational transformation is required for businesses to prosper and expand. Change management is responsible for the successful acceptance and utilization of change within the organization. It enables employees to comprehend, commit to, and operate well during the shift. Company transitions may be difficult and expensive in terms of both time and resources if appropriate organizational change management is not implemented. They can also have a negative impact on staff morale and the development of competent skills. In the end, a lack of competent change management might lead to the company failing.

Training Management:

The discipline of guiding and arranging all of your

organization's back-end instructor-led training (ILT) and virtual instructor-led training (vILT) operations, such as scheduling, logistics, resource management, instructor engagement, team collaboration, cost monitoring, budgeting, sales, and reporting, is known as training management. There are several key reasons why management training is essential, including allowing managers to get the best performance out of their employees, the ability to respond to issues quickly, improved communications with internal and external stakeholders, and finally, preparing the next generation of leaders.

Performance Management:

Performance management is a corporate management technique that allows managers to monitor and analyze the performance of their staff. The purpose of performance management is to create an atmosphere in which individuals can perform to the best of their ability and deliver the highest-quality work in the most efficient and effective manner. Performance appraisals, key performance indicators (KPIs), and management dashboards are examples of performance management procedures or technologies. Performance management is essentially what organizations undertake to become more successful and remain ahead of its competition.

Sustainability Development:

Sustainable development is the concept that human civilizations must survive and satisfy their needs without jeopardizing future generations' ability to meet their own needs. The Brundtland Report in 1987 provided the first "official" definition of sustainable development. Building with recycled or renewable materials is an example of sustainable development. Sustainable development is demonstrated by the construction of a new community in a previously undeveloped region without damaging the ecology or affecting the environment. Socially, sustainable practices may aid in the strengthening of communal relationships, the improvement of quality of life, and the provision of hope for a brighter future. Environmentally, sustainable practices can aid in the conservation of natural resources, the mitigation and adaptation to climate change, and the promotion of diversity.

Result and Descriptions:
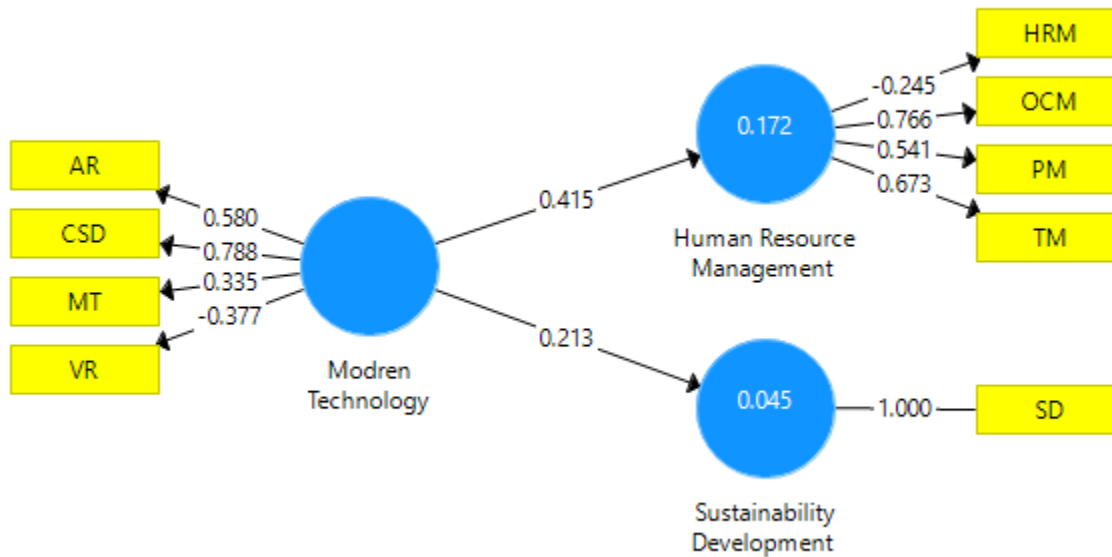
The above model describes that relation in between modern technology and human resource management also sustainability development. The modern technology shows that 0.415 and 0.213 means 41% and 21% positive relation with human resource management and sustainability development. The augmented reality shows positive relation with modern technology its rate is 0.580. the virtual reality **Outer weighted analysis:**

shows negative relation with modern technology its rate is -0.377. the sustainability development presents that 4% significant relation with independent variable. the human resource management play a vital role in organization performance its present that 0.766, 0.541, 0.67 these are all present that positive relation with each other.

	HUMAN RESOURCE MANGEMENT	MODREN TECHNOLOGY	SUSTAINABILITY DEVELOMENT
Augmented Reality		0.474	
Custom software development		0.693	
Human Resource Management	-0.238		
Modern technology		0.256	
Organization change management	0.607		
Performance management	0.336		
Sustainability Development			1.000
Training management	0.367		
Virtual Reality		-0.361	

Table-1

The above table describe that outer weighted analysis of each variable included dependent and independent variables. the result shows that weighted range the first variable is augmented reality it shows that 0.474 rate of weighted analysis. The organization change

management shows that 0.60 positive relation with human resource management. the training management shows that 36% also that sustainability development is another dependent variable its weighted value is 1.000 shows that 100% significant

level.

R-square;

	R Square	R Square Adjusted
Human Resource Management	0.172	0.164
Sustainability Development	0.045	0.036

Table-2

The above result describe that R square value result shows that value of R square and adjusted R square. The human resource management and sustainability both variables are considering as dependent variable its R square values are 0.172, and 0.045 which means that 17% and 16% effect human resource management for measuring the result. The sustainability development is another dependent variable its shows that 4% and its adjusted R square value is 3% respectively shows that research is reliable for test.

Co-linearity Statistic Analysis:

Model selection criteria:

	VIF
Augmented Reality	1.040
Custom software development	1.060
Human Resource Management	1.017
Modern technology	1.036
Organization change management	1.055
Performance management	1.198
Sustainability Development	1.000
Training management	1.265
Virtual Reality	1.038

Table-3

The above result determines the co-linearity statistical analysis of each variable included dependent and independent variables. the result shows that VIF values these values are 1.040, 1.060, 1.017, 1.036, 1.055, 1.198, 1.000, 1.265 and 1.038 these are all values shows that positive co-linearity statistical analysis.

	AIC (Akaike's I...	AICu (Unbiase...	AICc (Correcte....	BIC (Bayesian...	HQ (Hannan...	HQc (Correcte...
Human Resour.....	-15.934	-13.913	86.316	-10.723	-13.825	-13.751
Sustainability D....	-1.656	0.364	100.594	3.553	0.453	0.707

Table-4

The above research stud describe that model selection criteria result shows that AIC, values of AICu, BIC, HQ and HQc of dependent variables. the human resource management is dependent variable its values are -15.934, -13.913, 86.316, 10.723, 13.825 and -13.751 these are all shows that negative values of human resource management. the sustainability development is another dependent variable its AIC value is -1.656, 0.364, 100.594, 3.553, 0.453 and 0.707 respectively these are all shows positive and onr value is negatively shows that effect of model selction criteria.

Significant Analysis:

	Original Sample...	Sample Mean (....	Standard Deviation	T Statistics(|O/....	P Value
AR<- Modern Technology	0.474	0.396	0.211	2.250	0.025

CSD<- Modern Technology	0.693	0.538	0.292	2.188	0.029
HRM<- Human Resource Management	-0.238	-0.141	0.234	1.019	0.308
MT<- Modern Technology	0.256	0.234	0.185	1.384	0.167
OCM<- Human Resource Management	0.670	0.473	0.433	1.548	0.122
PM<- Human Resource Management	0.336	0.260	0.255	1.317	0.189
SD<-Sustainability Development	1.000	1.000	0.000		
TM<- Human Resource Management	0.367	0.264	0.280	1.309	0.191
VR<- Modern Technology	-0.361	-0.255	0.310	1.164	0.245

Table-5

The above result describes that significant analysis of each matrix between dependent and independent variables the result represents that original sample value, value of sample mean, standard deviation rate, T statistic value also present that p value of variables. the AR<-modern technology its original sample value is 0.474 the sample mean value is 0.396. according to the result its standard deviation value is 0.211 the T statistic rate is 2.250 also that probability value shows 0.025 means 2% significantly analysis in between AR and modern technology. The CSD<-modern technology shows that original sample value is 0.693 its sample mean value describes that 0.538 the standard deviation rate present that 29% deviate from mean. Similarly, the p value of CSD and modern technology is 0.029 means that 2% significantly relationship between custom software development and modern technology. The organization change management <-human resource management present that original sample value is 0.670 its sample mean value is 0.473 the standard deviation rate is 0.433 means that 43% deviate from mean. The T statistic value is positively relating between two variable also significant relationship between them its values are 1.548 and 0.122.

Indicator correlation coefficient:

	Mean	Median	Min	Max	Standard Devi...	Excess Kurtosis	Skewness
Augmented Reality	2.120	2.000	1.000	4.000	0.930	-1.449	-0.017
Custom software development	1.990	2.000	1.000	4.000	0.854	-1.168	0.215
Human Resource Management	2.170	2.000	1.000	5.000	0.762	0.750	0.387
Modern technology	2.500	3.000	1.000	4.000	0.933	-0.852	-0.188
Organization change management	1.870	2.000	1.000	4.000	0.820	-0.786	0.468
Performance management	2.000	2.000	1.000	4.000	0.787	-0.740	0.250
Sustainability Development	2.720	2.000	1.000	7.000	2.045	-0.194	0.999
Training management	2.740	3.000	1.000	5.000	1.397	-1.254	0.186
Virtual Reality	3.640	4.000	1.000	5.000	1.145	-0.459	-0.594

Table-6

The above result determines the indicator correlation coefficient of each variables included dependent and independent. Result represent that mean value, median, minimum, maximum, also shows that

standard deviation, excess kurtosis rate, and skewness value of each indicators. Result describe overall study for measuring the impact of modern technology on human resources management and sustainable development. According to the result overall minimum value is 1.000 the maximum value is 5.000 the median rate of all variable is 2.000 respectively. the augmented reality is independent variable its mean value is 2.120, the standard

Model fitness analysis:

deviation rate is 0.930 its excess kurtosis value is -1.449 and skewness rate is -0.017 respectively shows that 93% deviate from mean. The custom software development is another independent variable its mean value is 1.990 the standard deviation value is 0.854 its excess kurtosis rate is -1.168 and the skewness rate is 0.215 shows that 85% deviation from mean.

	Saturated Model	Estimated Model
SRMR	0.131	0.134
D_ULS	0.769	0.805
D_G	0.160	0.165
Chi-Square	89.886	91.759
NFI	-0.074	-0.096

Table-7

The above table represent that model fitness analysis result shows saturated model and estimated model. This research study describe the SRMR value, D-ULS value, D_G rate also present chi square and NFI. The values of saturated model is 0.131, 0.769, 0.160 its chi square value is 89.886 shows that research model is

fit for analysis. The estimated model present the SRMR value is 0.134, its D-ULS value is 0.805, D-G rate is 0.165 also present the chi square value is 91.759 represent the positive and significant effect this model fit for analysis.
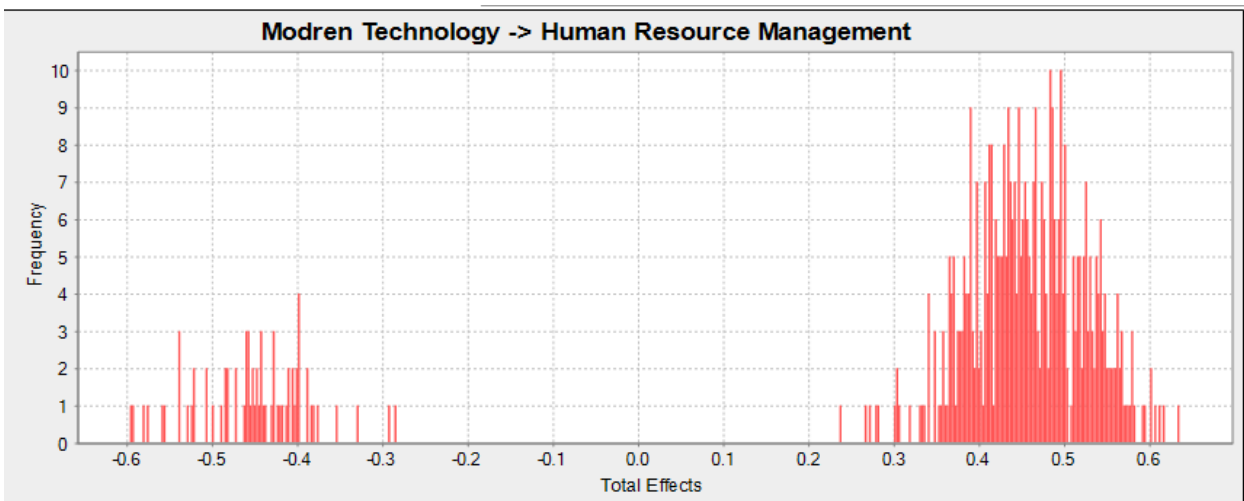
The above graph represents that total effect in between modern technology and human resource management. the horizontal side shows that range to total effect and red bar line present the modern technology relation with human resource management. the vertical side shows frequency level which is start from 0 and end at 10 points.

Conclusion:

In conclusion, we examined that the world has quickly transformed due to the rapid innovation of modern technology. In the modern world, the development of modern technology has altered human's live

standards. It has put significant influence on humans' life and business. Nowadays technology is essential for the growth and success of every industry. The application of technology in HRM resource management is extremely important. Technology is used in the process of resource management and sustainable development process. In this research paper, we studied the impact of modern technology including information technology, artificial intelligence technology, internet of tings, ICT, on human resource management and to maintain sustainable development. For this purpose, we collected sample data from many organizations and the impact of modern technology has been examined by investigating the various applications of IT, ICT, AI and IoT in business sector. It is exploring that information technology has great impact on the business performance. It has ability to enhance the economy of the country. The impacts of ICT information and communication technology on HRM has also been investigated in detail. It is concluded that ICT has major influences on the sustainability, and Human resource management. As both line managers and HR have interest in the successful business. Therefore, for the successful business there seems basic need to fulfil the demands of organization. the emergence of modern technology has made it easy to provide better service to the HR and line managers. With the help of technology, data and information can be managing, store, and process in an effective way which in turn enhance the performance of the organization and help to maintain sustainable development. It is therefore highlighted that information technology, AI, has significant positive influence in the development of sustainability. Apart from this, technology is solely responsible for the current world becoming more computerized. The success of all the world's cutting-edge initiatives depends on this digitalization. Today, all sectors of the global economy that use technology are referred to as "4.0 pharma industries." In order to help when there is a lack of the commercial products, these companies provide alternatives for a wide range of products. Utilizing cutting-edge technology, the emerging markets transformed their materials by reprocessing them and altering their design. Moreover, the modern technological revolution has significant role in enhancing the resource management system. As sustainable development consists of two concepts which have direct association between them. One is sustainability and second is development. Both terms depend on each other. We can say that without sustainability there would be no development and without development there would be no sustainability. Thus, for sustainable development it is necessary that there should be sustainability and development simultaneously. With the help of emergence technologies, it become easy to maintain sustainable development and it has also positive influence on the effectiveness of resource management system. Employees in Human resource management are relieved of a significant amount of repetitive work due to the implementation of modern technology. Furthermore, automation technology has reduced documentation, facilitated the completion of various activities, and improved the effectiveness of HRM system.

REFERENCES

1. Agrawal, R., et al., Progress and trends in integrating Industry 4.0 within Circular Economy: A comprehensive literature review and future research propositions. Business Strategy and the Environment, 2022. 31(1): p. 559-579.
2. Alińska, A., B.Z. Filipiak, and A. Kosztowniak, The importance of the public sector in sustainable development in Poland. Sustainability, 2018. 10(9): p. 3278.
3. Bombiak, E. and A. Marciniuk-Kluska, Green human resource management as a tool for the sustainable development of enterprises: Polish young company experience. Sustainability, 2018. 10(6): p. 1739.
4. Caiado, R.G.G., et al., Challenges and benefits of sustainable industry 4.0 for operations and supply chain management—A framework headed toward the 2030 agenda. Sustainability, 2022. 14(2): p. 830.
5. Dantas, T.E., et al., How the combination of Circular Economy and Industry 4.0 can contribute towards achieving the Sustainable Development Goals. Sustainable Production and Consumption, 2021. 26: p. 213-227.
6. Di Baldassarre, G., et al., Sociohydrology: scientific challenges in addressing the sustainable development goals. Water Resources Research, 2019. 55(8): p. 6327-6355.
7. Di Vaio, A., et al., Artificial intelligence and business models in the sustainable development goals perspective: A systematic literature review. Journal of Business Research, 2020. 121: p. 283-314.
8. Fatimah, Y.A., et al., Industry 4.0 based sustainable circular economy approach for smart waste management system to achieve sustainable development goals: A case

study of Indonesia. Journal of Cleaner Production, 2020. 269: p. 122263.

9. George, G., R.K. Merrill, and S.J. Schillebeeckx, Digital sustainability and entrepreneurship: How digital innovations are helping tackle climate change and sustainable development. Entrepreneurship Theory and Practice, 2021. 45(5): p. 999-1027.

10. Goralski, M.A. and T.K. Tan, Artificial intelligence and sustainable development. The International Journal of Management Education, 2020. 18(1): p. 100330.

11. Gregori, P. and P. Holzmann, Digital sustainable entrepreneurship: A business model perspective on embedding digital technologies for social and environmental value creation. Journal of Cleaner Production, 2020. 272: p. 122817.

12. Linkov, I., et al., Governance strategies for a sustainable digital world. Sustainability, 2018. 10(2): p. 440.

13. Malik, R.S., Educational challenges in 21st century and sustainable development. Journal of Sustainable Development Education and Research, 2018. 2(1): p. 9-20.

14. Mensah, J., Sustainable development: Meaning, history, principles, pillars, and implications for human action: Literature review. Cogent social sciences, 2019. 5(1): p. 1653531.

15. Nambisan, S., M. Wright, and M. Feldman, The digital transformation of innovation and entrepreneurship: Progress, challenges and key themes. Research Policy, 2019. 48(8): p. 103773.

16. Olawumi, T.O. and D.W. Chan, A scientometric review of global research on sustainability and sustainable development. Journal of cleaner production, 2018. 183: p. 231-250.

17. Polasky, S., et al., Role of economics in analyzing the environment and sustainable development. Proceedings of the National Academy of Sciences, 2019. 116(12): p. 5233-5238.

18. Pujara, Y., et al., Review on Indian Municipal Solid Waste Management practices for reduction of environmental impacts to achieve sustainable development goals. Journal of environmental management, 2019. 248: p. 109238.

19. Sheffield, J., et al., Satellite remote sensing for water resources management: Potential for supporting sustainable development in data-poor regions. Water Resources Research, 2018. 54(12): p. 9724-9758.

20. Tomislav, K., The concept of sustainable development: From its beginning to the contemporary issues. Zagreb International Review of Economics & Business, 2018. 21(1): p. 67-94.

21. Vinuesa, R., et al., The role of artificial intelligence in achieving the Sustainable Development Goals. Nature communications, 2020. 11(1): p. 1-10.