



GOVERNANCE AND HRM PRACTICES OF THE DISTANCE EDUCATION SYSTEM IN INDIA: A STUDY OF SELECTED UNIVERSITIES WITH SPECIAL REFERENCE TO EQUITY AND ACCESSIBILITY OF WOMEN AND UNDERPRIVILEGED LEARNERS

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Abstract

The National Education Policy (NEP) of India of 2020 has made Open and Distance Learning (ODL) an important tool to widen access to higher education. The expansion of access has not led to a complete end of the persistence of inequity in quality and the achievement of learners, which points to an urgent gap in governance. The current research fulfills this gap by introducing and empirically supporting a new Governance Inclusiveness Model which is based on the Neo Institutional Theory and Service Dominant logic and the conceptualization of governance and human resource management (HRM) as dynamic service providers and not administrative tasks. The authors selected a quantitative cross-sectional design to collect the data on 560 learners in four Indian universities. The results prove that the impact of the Culture of Institutional Inclusivity and Women and Underprivileged Groups Accessibility is a significant shore to reinforce ODL governing mechanisms. Governance and Strategic HRM Practices turned into the strongest predictors of outcomes in learners, and the impact of staff competence, compassionate administrative backing, and responsive service delivery became essential in promoting academic achievement among the marginalised learners. Conversely, no noteworthy impact was realised by the Centre Management Mechanisms on the achievement of the learners, which may indicate that the concept of decentralised structures has no relation with the real performance of the services. This work disrupts the traditional administrative paradigms of the back-office by reinventing governance as a service-based equity-oriented ecosystem and provides a conceptual framework of inclusive ODL reform. These results offer practical

implications to policy makers and institutional administrations concerned with how to realise the equity imperative of NEP 2020 and promote the massification of quality distance higher education.

Keywords Open and Distance Learning (ODL); Higher Education Governance; Strategic HRM; Social Equity; Women in Education; NEP 2020; Institutional Inclusivity; Student Support Services; India.

1. Introduction

Higher education is experiencing a kind of seismic shift around the planet, in the devaluation of embodied, elite, and campus-based learning, and toward more massified and technology-mediated learning systems (O'Brien et al., 2013). Open and Distance Learning (ODL) is no longer just another juice pedagogic mode but, in fact, the key pillar of the modern knowledge economy, one with the necessary role of democratizing access to millions of spatially disenfranchised, temporally disenfranchised, and economically disenfranchised human beings (Saima Ghosh, 2012; O'Brien et al., 2013). ODL systems both in the Global North and in the Global South struggle with the Iron Triangle of access, cost and quality, a paradigm suggested by Sir John Daniel that suppositions that maximizing one aspect at the expense of the others (Daniel, Kanwar, & Uvalić-Trumbić, 2009). The present-day scholarship, though, attempts to state that there is a fourth dimension, Emerging Governance, which is equally pivotal in maintaining this triangle. Without properly established governance systems and competent human resources, the aspiration to have everyone educated is an ideal that can only be saluted at a rhetoric level as opposed to being a practical reality (Daniel et al., 2009).

1.1 Policy Relevance: The Indian situation and NEP 2020.

India is at a major crossroad in education, with one of the largest open and distance learning networks present anywhere in the world which includes National Open Universities (e.g., IGNOU) and State Open Universities, as well as dual-mode institutions (Mukherjee, 2015). ODL is specifically a strategic convenience of achieving the highly ambitious target of 50 percent Gross Enrolment Ratio (GER) in higher education in the year 2035, being explicitly mentioned as a vehicle in the National Education Policy (NEP) 2020, which considers the Indian ethos of the uplifting the last man in the queue, or Antyodaya (Aithal & Aithal, 2020; Naik, Chandramani, & Majumdar, 2024).

According to All India Survey on Higher Education (AISHE) 2021-22, there was an overall enrolment of about 4.33 crore, female enrolment by 2021-22 had increased by 32 per cent since 2014-15 to reach 2.07 crore (Sanghita Ghosh, 2024). There were also some encouraging trends in the number of enrolments, but they hide deeply rooted inequalities. The registration of the Scheduled Castes and Scheduled Tribes (SC/ST) has been on the rise, but the retention and outcome of learning among those groups in online degree programs are of major concern. The actual provision of equity is determined by regulations however strict regulation (ODL Regulations 2017, 2020) to standardize quality has been introduced by the Distance Education Bureau (DEB) of the UGC.

1.2 The Research Gap: The Governance Equity Disconnect

The number of ODL institutions is on the increase, however, the challenges remain in the so-called governance deficit. Available literature shows that HRM is generally considered to be climacteric in Indian Higher Education Institutions (HEIs), which are generally associated with shortages of the faculties, mismatches in skills, is haphazard regarding recruitment processes, and regulated by a dense network of regulations that paralyze institutional innovation (Alam, 2022; Dwivedi & Joshi, 2019; Verma & Kaur, 2024). In absence of available empirical data, though literature exists to examine ODL pedagogy as well as student satisfaction and more so, to connect administrative variables of human resources to social outcomes (Equity and Accessibility). Additionally, the issues confronting women and the poor students, who are major consumers of ODL, because of social economic factors, are usually seen in the confines of sociological and not through the prism of managerial conditions. There is therefore an acute deficient of knowledge on the ways in which recruitment, training, and accountability of the ODL personnel (HRM) directly determine the provision of support services to a rural female student or a student in a marginalized community.

1.3 Novelty and Objectives

This study addresses this gap by proposing a novel "Governance-Inclusivity" model. It posits that Governance and HRM are not merely administrative functions but are "service enablers" that determine the inclusivity of the system.

The specific objectives are:

1. To examine the influence of Institutional Inclusivity and Accessibility Policies on the Governance of ODL systems.
2. To analyze the impact of Governance, HRM Practices, Course Delivery, and Centre Management on Learner Outcomes.
3. To investigate the specific role of Student Support Services (SSS) as a critical link in this value chain.

2. Proposed conceptual framework and development of hypotheses

This research integrates the Neo-Institutional Theory with Service-Dominant Logic in order to analyze the complex interdependence between the administrative structures and social performance.

Neo-Institutional Theory: The theorist approach argues that institutions of higher education take on structural forms not merely to enhance operational efficiency but to achieve a form of legitimacy within their extended ecology because of isomorphic pressures (Wiseman, Astiz, & Baker, 2014). Open and Distance Learning (ODL) institutions in India face the problem of forced coercive isomorphism in the form of UGC-DEB regulatory directives (Singh & Tiwari, 2016). The subsequent dynamism known as decoupling occurs when institutions declare normative political governance policies i.e. the creation of SC/ST cells but do not actually practice them. In this study, therefore, the constructs of Governance and

Culture of Inclusion operationalise the terms of Governance and Inclusion Culture by adherence to legitimising norms to expand on the Institutional Theory.

Service- Dominant (S -D) Logic: This model recast the research paradigm in the form of the university as a facilitator of knowledge co-creation (service(s)) rather than the producer of degrees (goods) (Banwait, 2021). According to S -D logic, the learner is a co-producer of value. Governance and Human Resource Management (HRM) should, therefore, act as service enablers and not as back-office bureaucracies (Andersson et al., 2012). In case HRM practices do not train employees in terms of empathy and technological support, the developed service ecosystem will leave the learner behind and decrease the level of educational achievement. The governance in the institutions of higher learning (HEIs) is not like corporate governance since it is a product of shared governance and academic freedom. Performance indicators, accountability outcomes, and stakeholder activeness have been introduced by the New Public Management (NPM) movement so that the governance is not similar with them (De Vries & Nemec, 2013). It has been observed by existing scholarship that strong governance leads to improved organisational performance through balance of physical and human resources, thus lack of the same leads to administrative fog that fails to address the marginalised learners who lack social capital to override bureaucratic hurdles.

2.1 Institutional inclusivity and organizational culture

The organisational culture and institutional inclusivity are two antecedents that determine successful governance in Distance Education (DE) (Czerniewicz & Brown, 2009). Empirical studies have pointed at the fact that with the development of an inclusive organizational culture typified with values of equity, diversity and open communication directly affects the governance structures and makes them more participatory and transparent (De Vries & Nemec, 2013). Researchers have argued that governance goes beyond regulatory compliance to include cultural governance, in which the moral requirement to use various voices, including faculty, remote employees, and minority students, informs the process of strategic decision-making (Kuknor & Bhattacharya, 2022). Research suggests that institutions of DE with high scores on inclusiveness are more likely to have decentralised styles of governance which give more autonomy to regional centres. This type of cultural fit decreases the tension between the central administration and peripheral units and, as a result, increases the flexibility and responsiveness of the governance system in general (Akanji, Mordi, Ituma, Adisa, & Ajonbadi, 2020). As a result, positive inclusive culture is a sort of lubricant of the governance mechanisms so that the policies are not just top-down decrees, but they are culturally supported and well-performing amongst the network of the organisation.

H1: Institutional Inclusivity & Culture has a significant positive influence on the Governance of the Distance Education System.

2.2 Accessibility to women and underprivileged groups

The accessibility to women and less fortunate populations is often mentioned as a steer in the literature as a leading factor of innovation in governance in Open and Distance Learning (ODL) (Adamu, Waziri, Adesina, & Iro, 2024). The pressure to cater to these underrepresented groups of people forces distance education systems to transform into inflexible, campus-based systems of administrative organization into non-inflexible, social responsive, and governed systems (Smith, 2024). Studies point out that the notion of equity-based governance in most cases comes to fruition based on the unique demands of these groups, including the need to have reduced fee levels, vernacular contents and safe and locally situated examination centres (Devkota, 2021). Scholars believe that the accessibility factor necessitates governmental bodies to allocate their resources to the final mile of education provision. Therefore, the pursuit of accessibility is not only a burden to the system, but contributes to governance in that it instigates agility, accountability, service-driven administrative spirit that enhances the validity and scope of operation of the institution.

H2: *Accessibility of Distance Education to Women & Underprivileged has a significant positive influence on the Governance of the Distance Education System.*

2.3 Governance in Distance education

Empirical studies have continued to prove that there is a strong correlation between the quality of governance and the outcomes of learners such as retention, completion rates and employability (Knight & Yorke, 2003; Tomlinson, 2012). Governance in digital education setting is achieved by how trustworthy academic calendars are, how transparent assessment mechanisms are, and how effective grievance-redress mechanisms are (Riggert, Boyle, Petrosko, Ash, & Rude-Parkins, 2006). The academic sources that are listed in the large education databases claim that the reduction of transactional distance is achieved through good governance not only in the pedagogical sense but also in the administrative one. With slim governance systems and transparency, there is less anxiety among learners regarding bureaucratic hurdles (when it comes to examinations or degree issuance), and therefore more concentration on learning activities. Further, governance that has a strategic orientation means that the curriculum changes may correspond with the industry standards consequently having a direct impact on the graduate employability. Empirical data show that schools that have either ISO certification or well-crafted governance guidelines are found to have statistically significant student satisfaction and reduced dropout rates (Belmonte, 2020). Literature states that governance operates as an invisible scaffold to the learning process; when well-developed, the learning process develops trust, and trust is a major indicator of student persistence and academic achievement in remote learning settings (Darling-Hammond, Flook, Cook-Harvey, Barron, & Osher, 2020).

H3: *Governance of the Distance Education System has a significant positive influence on Learner Outcomes.*

2.4 Human Resources (HR) practices

The Human Resources (HR) practices implemented in digital education are supported by the literature that indicates that despite the technological backgrounds, the human factor is crucial (Alomari, El-Kanj, Alshdaifat, & Topal, 2020). Studies indicate that the academic counselors and administrative personnel recruitment, training, and motivation have a significant impact on the learner outcomes (Yang, 2004). In contrast to conventional universities, digital education is extremely dependent on part-time academic counselors and support staff whose ability and dedication to the profession define the quality of the human interface that students have (Siyi, Yu, & Al-Samawi, 2023). Research has shown that particular HR practices, including special training in online pedagogy of faculty members and customer-service training of administrative employees, are positively related to student grades, as well as student satisfaction (Cole, Feild, & Harris, 2004). By having HR practices such that the staff is well compensated and trained to use Learning Management Systems (LMS), the time spent responding to the queries of the students also reduces, and the quality of the feedback is also increased. This means that, HR is more of a frontline determinant of academic quality as opposed to a back-office operation. Good HR practices also ensure that the emotional labor needed to support distant learners is effectively done and this minimizes the isolation of the learners and improves the overall academic performance among the learners.

H4: Human Resources Practices (HR) in Delivery of Distance Education have a significant positive influence on Learner Outcomes.

2.5 Course delivery and technical support

Modern scholars point out course delivery and technical support as hygienic elements of distance education, neglected of which leads to failure, and those achieved excellently contribute to success (Merriam & Baumgartner, 2020). When a student finds it hard to access the portal instead of wasting time to understand the subject matter, overload of cognition is suffered and eventually results in frustration and turnover (Lehman & Conceição, 2013). The concept of Course Delivery is inclusive of pedagogical design, i.e. instructional scaffolding, multimedia interwovenness and mobile suitability. Use it together with a reactive technical support desk (like 24*7 chatbots or fast ticketing and the like), and you get a frictionless learning experience. There is strong empirical evidence that timely technical resolution brings about a sense of agency in the minds of the learners. As soon as students believe that technology will not let them down and that support can be easily offered, engagement surveys like the rates of logins and time spent at the desk become better, which subsequently have a direct impact on the grades and the overall rates of passing the course (Aadland & Heinström, 2024)

H5: Course Delivery and Tech Support have a significant positive influence on Learner Outcomes.

2.6 Student Support Services

Student Support Services (SSS) is considered the most important variable in retention by literature in open and distance learning (ODL) (Shikulo & Lekhetho, 2020). This construct encompasses non-academic support: library access, psychological counseling, peer mentoring and administrative handholding. The phenomenon of the isolation of the distance learner is indeed historical. Student Support services is the medium that relates the lonely learner with the institution (Chakuchichi, 2011). The literature suggests that proactive SSS, in which the institution outreaches the student before the failure has set in, does have a significant positive impact on the outcomes (Omari & Kefiloe, 2022). As an example, automated nudge messages to remind students about deadlines or virtual orientation programs help to integrate into the distance learning format. Learner support framework analyses contend that SSS offers the affective support needed to achieve cognitive success. Social and administrative support leads to an increase in the level of self-efficacy of students, which increases the chance of enduring difficult modules and with subsequent high rates of completion and overall better academic performance (Ndege, 2024).

H6: Student Support Services (SSS) have a significant positive influence on Learner Outcomes.

2.7 Institutional Mechanism of Centre Management

The centre management institutional mechanism is the management of learner's support centres (LSCs) or the study centres which are the tangible presence of the university. Nevertheless, despite the spread of online education, studies, and findings have shown that to most students, specifically those in the third world countries, the local centre is an important element in terms of submitting assignments, taking weekend classes, and networking with peers (Mishra, Gupta, & Shree, 2020). It has been indicated in literature that the standardization and monitoring of these centres have a positive impact on the outcomes of learners. As a poorly controlled centre can lead to cancellations (without any warning) and lost records, the level of the student motivation will decrease significantly. On the other hand, well-established centre-management systems which are typified by routinely conducted audits, digital record-keeping, and uniform quality assurance will ensure fair experience to all students, irrespective of the geographical location (Zarei & Mohammadi, 2022).

H7: Institutional Mechanism of Centre Management has a significant positive influence on Learner Outcomes.

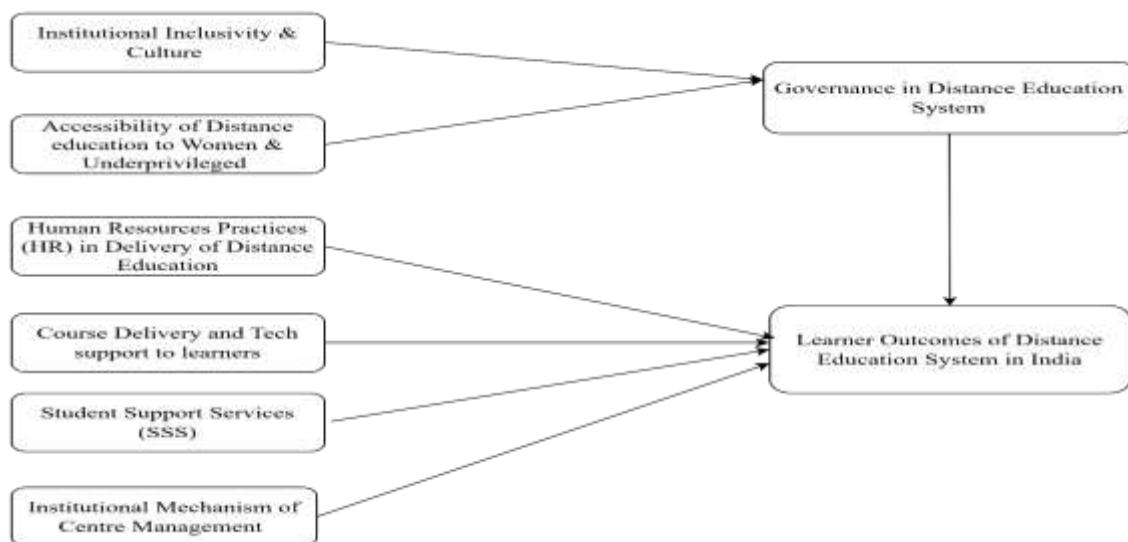


Figure 1 Conceptual Diagram

3. Methodology

The present study adopts a quantitative research approach utilizing a descriptive cross-sectional design to evaluate the perceptions and effectiveness of the distance education system in India. This design was selected to empirically analyze the variations in respondent feedback across different demographic and institutional variables. The study employs a stratified random sampling technique to ensure representation across four universities offering Open and Distance Learning (ODL) programs namely Indira Gandhi National Open University (IGNOU), Molana Azad National Urdu University (MANUU) Hyderabad, B.R. Ambedkar Open University, and Jamia Hamdard Deemed to be University Delhi. The final dataset comprises 560 respondents (N=560). The demographic profile of the sample is diverse, ensuring the study's findings are generalized across various strata. The sample is relatively balanced, with 56.3% (n=315) male and 43.8% (n=245) female respondents. The respondents are predominantly young adults, with 37.1% falling in the 18–25 age group and 30.2% in the 26–35 bracket. In terms of experience with the distance education system, the largest cohort (39.5%) has served for less than 5 years, while a significant portion (37%) possesses substantial experience ranging from 11 to 20 years. The study captures a wide geographic spread, with 29.1% of respondents residing in rural areas, 23.8% in urban centers, and the remainder in semi-urban or sub-urban locales. Notably, the sample is inclusive of marginalized groups, with 28.2% identifying as belonging to a Minority Community and 21.3% from Other Backward Classes (OBC). The educational background of the respondents is well-distributed, with 24.8% holding a Graduate degree, 22.1% holding a Postgraduate degree, and 12.0% possessing Doctorate qualifications.

Data was collected using a structured questionnaire divided into two sections:

1. Section A (Demographic Profile): Captured categorical variables including gender, age, educational background, residential location, social category, and institutional affiliation (as detailed in Table 1).
2. Section B (Core Constructs): Consisted of items measuring the respondents' perception of distance education quality, administrative support, and curriculum relevance. These items were measured on a

five-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), to capture the intensity of respondents' attitudes.

3.1. Statistical Analysis

To ensure the internal consistency of the Likert scale items, a reliability analysis was conducted using Cronbach's Alpha. A pilot study was undertaken with 50 respondents prior to the full-scale survey to validate the instrument's clarity and relevance. The cronbach alpha was found to be statistically significant (0.854). To start with, Cronbach alpha was used to test the internal consistency of the survey items. The values in Table 2 display that all the coefficients of alpha were above the value of 0.70 suggested by (Tavakol & Dennick, 2011) hence signifying strong internal reliability of the chosen scales.

This initial assessment was followed by a Confirmatory Factor Analysis (CFA) procedure to study the adequacy of the measurement model, as well as, to support construct reliability. The fit of the model was evaluated through a combination of an Absolute, Incremental, and parsimony index and it included the ratio of Chi-square/ degrees of freedom, (chi/df), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Adjusted Goodness-of-Fit Index (AGFI). It is also stated that a model has a satisfying fit in case the chi-square/df Chi-square/DF = 1.294 is less than 3.0, as well as CFI are greater than 0.90 (CFI =.982) , RMSEA=. 034 is no more than 0.08 and AGFI is not less GFI=. 920; AGFI=. 895 than 0.80. The fit statistics of the offered model were quite below these acceptable limits [31, 32].

After it was established that there was a good fit to the model, convergent validity was tested using Composite Reliability (CR) and Average Variance Extracted (AVE). According to the value taken in [33], convergent validity is determined when CR is above 0.70, AVE is above 0.50 and CR is above AVE. The results have shown that the CR values were all above 0.70 and AVE values were above 0.50. Moreover, it has been found that the criterion of convergent validity of the framework was met by all latent variables, therefore, supporting the convergent validity of the framework.

Lastly, there was the measure of discriminant validity, which established that the constructs used were independent of one another. By using the FornellLarcker criterion [33], the square root of the AVE of every construct is supposed to be more than the correlations of the construct with any other in the model. According to the Table 3 values, the value of AVE was between 0.603 and 0.767. The diagonal items, which are the square root of the AVE, were within the range of 0.776 to 0.876, and they were all greater than all the items that are off-diagonal and inter-construct. This affirms the fact that the measurement model has a high level of discriminant validity.

Table 5. 9 Demographic Profile

		Count	Percentage
Gender	Male	315	56.3%
	Female	245	43.8%
Age Group	18-25 Years	208	37.1%
	26-35 Years	169	30.2%
	36-45 Years	99	17.7%
	46-55 Years	44	7.9%
	> 55 Years	40	7.1%
Educational Background	Intermediate/2	134	23.9%
	Graduate	139	24.8%
	Postgraduate	124	22.1%
	Diploma	96	17.1%
	Doctorates	67	12.0%
Location of residence	Rural	163	29.1%
	Urban	133	23.8%
	Semi Urban	125	22.3%
	Sub Urban	88	15.7%
	Others	51	9.1%
Please specify the period spent in serving Distance Education System, if applicable	Less Than 5 Years	221	39.5%
	6-10 Years	132	23.6%
	11-15 years	104	18.6%
	16-20 Years	103	18.4%
Please specify about which University you are giving your opinion/views	IGNOU	185	33.0%
	MANUU	159	28.4%
	B.R.Ambedkar Open University Hyderabad	109	19.5%
	Jamia Hamdard	107	19.1%
Category	General	82	14.6%
	OBC	119	21.3%
	ST	99	17.7%
	SC	102	18.2%
	Minority Community	158	28.2%

Table 2: Construct Reliability and Validity

Construct	Items	Factor Loading	Cronbach Alpha
Institutional Inclusivity & Culture	IIC1	0.917	0.944
	IIC2	0.867	
	IIC3	0.923	
Accessibility of Distance education to Women & Underprivileged	ADEWAU1	0.927	0.935
	ADEWAU2	0.909	
	ADEWAU3	0.941	
Governance in Distance Education System	GIDES1	0.839	0.911
	GIDES2	0.840	
	GIDES3	0.837	
Human Resources Practices (HR) in Delivery of Distance Education	HRPDE1	0.880	0.95
	HRPDE2	0.887	
	HRPDE3	0.884	
	HRPDE4	0.929	
Course Delivery and Tech support to learners	CDTSL1	0.907	0.946
	CDTSL2	0.885	
	CDTSL3	0.888	
	CDTSL4	0.935	
Student Support Services (SSS)	SSS1	0.897	0.937
	SSS2	0.857	
	SSS3	0.882	
	SSS4	0.888	
Institutional Mechanism of Centre Management	IMOCM1	0.848	0.907
	IMOCM2	0.903	
	IMOCM3	0.897	
	IMOCM4	0.877	
Learner Outcomes of Distance Education System in India	LOODESII1	0.801	0.933
	LOODESII2	0.814	
	LOODESII3	0.822	
	LOODESII4	0.827	

Table 3: Discriminant Validity

	CR	AVE	MSV	MaxR(H)	ADEWAU	HRPDE	CDTSL	SSI	LOODESII	IMOCM	IIC	GIDES
ADEWAU	0.935	0.828	0.092	0.942	0.910							
HRPDE	0.952	0.832	0.242	0.964	0.144	0.912						
CDTSL	0.947	0.817	0.138	0.960	0.100	0.142	0.904					
SSI	0.937	0.789	0.153	0.944	0.091	0.280	0.260	0.888				
LOODESII	0.934	0.778	0.373	0.934	0.303	0.492	0.341	0.388	0.882			
IMOCM	0.907	0.711	0.019	0.912	-0.023	0.041	-0.015	0.137	0.070	0.843		
IIC	0.946	0.853	0.153	0.964	0.052	0.259	0.235	0.391	0.390	0.128	0.924	
GIDES	0.911	0.774	0.373	0.911	0.285	0.392	0.371	0.298	0.611	0.052	0.284	0.880

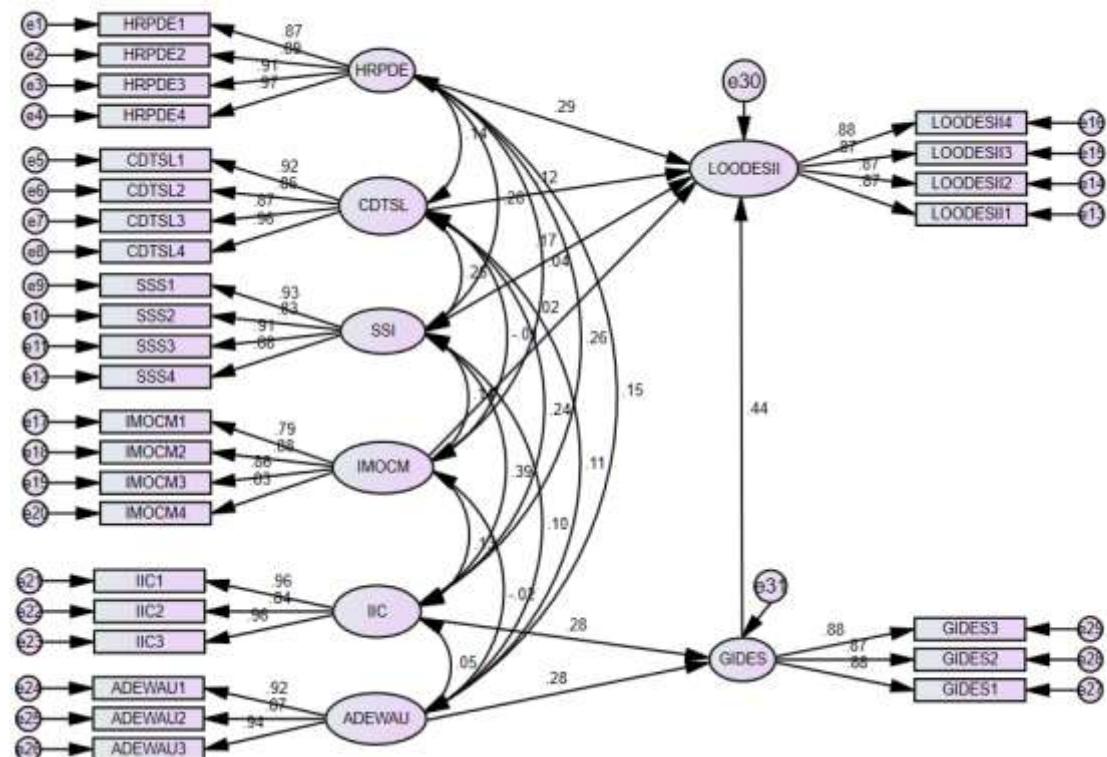


Table 4: Structural Path Coefficients (Hypothesis Testing)

Hypothesized Path			β	S.E.	C.R.	P	Decision
GIDES	<---	IIC	0.232	0.035	6.693	***	Accepted
GIDES	<---	ADEWAU	0.259	0.039	6.593	***	Accepted
LOODESII	<---	HRPDE	0.327	0.043	7.647	***	Accepted
LOODESII	<---	CDTSL	0.122	0.037	3.329	***	Accepted
LOODESII	<---	SSI	0.174	0.040	4.354	***	Accepted
LOODESII	<---	IMOCM	0.024	0.040	0.52	0.60	Not

				6		3	accepted
LOODESII	<---	GIDES	0.477	0.04 2	11.35 9	***	Accepted

Results

Structural equation modeling was deployed to test the main research hypotheses between the proposed constructs. Path coefficient analyses were used to test the major causal paths, as shown in Table 4.

The main factors influencing GIDES were examined first. The influence of IIC ($\beta=0.232$, $t=6.693$, $p<0.001$) on GIDES was found significant. Therefore, the H1 was supported. Similarly, ADEWAU ($\beta=0.259$, $t=6.593$, $p<0.001$) was found to have a significant positive impact on GIDES, supporting the H2. Regarding the direct predictors of LOODESII, the results indicated that HRPDE ($\beta=0.327$, $t=7.647$, $p<0.001$) and SSS ($\beta=0.174$, $t=4.354$, $p<0.001$) exerted a significant positive influence. Thus, these hypotheses were supported. Additionally, CDTSL ($\beta=0.122$, $t=3.329$, $p<0.001$) was found to significantly influence LOODESII, supporting the hypothesis. In contrast to the other factors, IMOCM on LOODESII ($\beta=0.024$, $t=0.520$, $p>0.05$) was found to have an insignificant influence. Therefore, the hypothesis proposing a relationship between IMOCM and LOODESII was not supported. Notably, GIDES exerted a strong positive impact on LOODESII ($\beta=0.477$, $t=11.359$, $p<0.001$). Consequently, the hypothesis linking GIDES to LOODESII was supported. These indices show a good fitting model representing the variation in the outcome variable.

4. Discussion

This research study seeks to identify critical factors influencing learning outcomes in distance education system in India. To operationalize the research objectives, a conceptual framework was proposed and tested

The research findings showed that institutional inclusive culture and Accessibility of Distance education to Women & Underprivilege are supported to have a significant impact on Governance in Distance Education System. These results are comparable to previous research studies of (Matsieli & Mutula, 2024). This suggests that when IIC and Accessibility of Distance education to Women & Underprivilege are enhanced, there is a subsequent improvement in Governance in Distance Education System.

Furthermore, Human Resources Practices (HR) in Delivery of Distance Education, Course Delivery and Tech support to learners, and Student Support Services were supported to have a significant impact on Learner Outcomes of Distance Education System in India. These results are similar with previous studies of (Rumble, 2000). Specifically, Human Resources Practices (HR) in Delivery of Distance Education emerged as a critical antecedent, suggesting that higher perception of Human Resources Practices (HR) in Delivery of Distance Education leads to better outcomes in distance education.

In contrast Institutional Mechanism of Centre Management showed an insignificant relationship with Learner Outcomes of Distance Education System in India which shows divergence from traditional assumptions. This implies that merely increasing Institutional Mechanism of Centre Management does not necessarily translate into changes in Learner Outcomes of Distance Education System in India in this specific context.

Notably, a strong relationship was supported between Governance in Distance Education System and Learner Outcomes of Distance Education System in India. This finding confirms the importance of Governance in Distance Education System as a pivotal factor in cultivating Learner Outcomes of Distance Education System in India, supporting earlier research work of (Islam, 2013). This suggests that strategies aimed at improving Learner Outcomes of Distance Education System in India must prioritize the enhancement of Governance in Distance Education System.

Implications and Future Direction

Although this study has such contributions, it has its limitations. The study relied on cross-sectional survey data, thus restricting the ability to form a causal conclusion, as well as the ability to determine changes in perceptions with time. Indian distance-education learners were the only sample available, which can affect the level of generalization of the results into other national or institutional settings. Additionally, response bias is prone to self-reported measures. However, the research has large consequences to policy makers and administrators in the sense that it highlights the key roles played by Institutional Inclusivity & Culture, Accessibility of Distance education to Women & Underprivilege, Human Resources Practices (HR) in Delivery of Distance Education, and Governance in Distance Education System in improving the learning outcomes. Distance education can be significantly strengthened through strategic investments in institutional capacity, digital infrastructure, and professional development.

References

Aadland, M. G., & Heinström, J. (2024). 'It never seems to stop' Six high school students' experiences of information overload. *Information Research an international electronic journal*, 29(2), 159-172.

Adamu, S. U., Waziri, B. K., Adesina, A., & Iro, B. (2024). The Role of Open and Distance Learning (ODL) in Promoting Access to Women's Education in Northwestern Nigeria: A Case Study of the National Open University of Nigeria (NOUN). *West African Journal of Open and Flexible Learning*, 12(2), 1-22.

Aithal, S., & Aithal, S. (2020). Implementation strategies of higher education part of national education policy 2020 of India towards achieving its objectives.

Akanji, B., Mordi, C., Ituma, A., Adisa, T. A., & Ajonbadi, H. (2020). The influence of organisational culture on leadership style in higher education institutions. *Personnel Review*, 49(3), 709-732.

Alam, A. (2022). Impact of university's human resources practices on professors' occupational performance: empirical evidence from India's higher education sector. In *Inclusive businesses in developing economies: Converging people, profit, and corporate citizenship* (pp. 107-131): Springer.

Alomari, M. M., El-Kanj, H., Alshdaifat, N. I., & Topal, A. (2020). A framework for the impact of human factors on the effectiveness of learning management systems. *IEEE Access*, 8, 23542-23558.

Andersson, I., Bennström, S., Gustafsson, T., Melander, M., Pettersson, C., & Ölund, E. (2012). The IT Phenomenon in the Multinational Enterprise.

Banwait, K. (2021). *The student as customer: A study of the intensified marketisation of higher education in England*: University of Derby (United Kingdom).

Belmonte, D. (2020). The Age of Accountability: The Assault on Public Education Since the Time of a Nation at Risk.

Chakuchichi, D. (2011). Student retention as a function of the quality of learner support in open and distance learning: students' perceptions at the Zimbabwe open university. *International Journal of Open & Distance Learning*, 1(1), 90-98.

Cole, M. S., Feild, H. S., & Harris, S. G. (2004). Student learning motivation and psychological hardiness: Interactive effects on students' reactions to a management class. *Academy of Management Learning & Education*, 3(1), 64-85.

Czerniewicz, L., & Brown, C. (2009). A study of the relationship between institutional policy, organisational culture and e-learning use in four South African universities. *Computers & Education*, 53(1), 121-131.

Daniel, J., Kanwar, A., & Uvalić-Trumbić, S. (2009). Breaking higher education's iron triangle: Access, cost, and quality. *Change: The Magazine of Higher Learning*, 41(2), 30-35.

Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied developmental science*, 24(2), 97-140.

De Vries, M., & Nemec, J. (2013). Public sector reform: an overview of recent literature and research on NPM and alternative paths. *International Journal of Public Sector Management*, 26(1), 4-16.

Devkota, K. R. (2021). Inequalities reinforced through online and distance education in the age of COVID-19: The case of higher education in Nepal. *International Review of Education*, 67(1), 145-165.

Dwivedi, V. J., & Joshi, Y. C. (2019). Productivity in 21 st century Indian higher education institutions. *International Journal of Human Resource Management and Research*, 9(4), 61-80.

Ghosh, S. (2012). Open and distance learning (ODL) education system-past, present and future—a systematic study of an alternative education system. *Journal of Global Research in Computer Science*, 3(4), 53-57.

Ghosh, S. (2024). Essays on the economics of higher education among women in India.

Islam, A. N. (2013). Investigating e-learning system usage outcomes in the university context. *Computers & Education*, 69, 387-399.

Knight, P. T., & Yorke, M. (2003). Employability and good learning in higher education. *Teaching in Higher education*, 8(1), 3-16.

Kuknor, S. C., & Bhattacharya, S. (2022). Inclusive leadership: new age leadership to foster organizational inclusion. *European journal of training and development*, 46(9), 771-797.

Lehman, R. M., & Conceição, S. C. (2013). *Motivating and retaining online students: Research-based strategies that work*: John Wiley & Sons.

Matsieli, M., & Mutula, S. (2024). COVID-19 and digital transformation in higher education institutions: Towards inclusive and equitable access to quality education. *Education Sciences*, 14(8), 819.

Merriam, S. B., & Baumgartner, L. M. (2020). *Learning in adulthood: A comprehensive guide*: John Wiley & Sons.

Mishra, L., Gupta, T., & Shree, A. (2020). Online teaching-learning in higher education during lockdown period of COVID-19 pandemic. *International journal of educational research open*, 1, 100012.

Mukherjee, M. (2015). Indian education at the crossroads of postcoloniality, globalization and the 21st century Knowledge Economy (Part 1). In (Vol. 13, pp. 165-170): SAGE Publications Sage UK: London, England.

Naik, B., Chandiramani, J., & Majumdar, S. (2024). Is India's higher education system a case of elusive inclusive development? *Cogent Education*, 11(1), 2428874.

Ndege, W. M. (2024). *Learner support services, learner interactions and retention of students in open distance learning programmes: The case of selected universities in Kenya*. University of Nairobi,

O'Brien, K., Reams, J., Caspari, A., Dugmore, A., Faghihimani, M., Fazey, I., . . . Miller, R. (2013). You say you want a revolution? Transforming education and capacity building in response to global change. *Environmental Science & Policy*, 28, 48-59.

Omari, S., & Kefiloe, A. M. (2022). Postgraduate students in an open distance learning institution: Student support services' awareness and utilisation. *African Perspectives of Research in Teaching and Learning*, 6(2), 151-173.

Riggert, S. C., Boyle, M., Petrosko, J. M., Ash, D., & Rude-Parkins, C. (2006). Student employment and higher education: Empiricism and contradiction. *Review of educational research*, 76(1), 63-92.

Rumble, G. (2000). Student support in distance education in the 21st century: Learning from service management. *Distance education*, 21(2), 216-235.

Shikulo, L., & Lekhetho, M. (2020). Exploring student support services of a distance learning centre at a Namibian university. *Cogent Social Sciences*, 6(1), 1737401.

Singh, G., & Tiwari, P. K. (2016). A critical study of the regulations and policies in open and distance learning. *Indian Journal of Open Learning*, 25(2), 117-132.

Siyi, C., Yu, Q., & Al-Samawi, A. (2023). Effects of digital education on human resource development. *Human Systems Management*, 42(6), 691-706.

Smith, D. G. (2024). *Diversity's promise for higher education: Making it work*: Jhu Press.

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International journal of medical education*, 2, 53.

Tomlinson, M. (2012). Graduate employability: A review of conceptual and empirical themes. *Higher education policy*, 25(4), 407-431.

Verma, S., & Kaur, G. (2024). Faculty retention dynamics: investigating the role of HR climate, trust, and organizational commitment in higher education context. *SAGE Open*, 14(1), 21582440241233372.

Wiseman, A. W., Astiz, M. F., & Baker, D. P. (2014). Comparative education research framed by neo-institutional theory: A review of diverse approaches and conflicting assumptions. *Compare: A journal of comparative and international education*, 44(5), 688-709.

Yang, H.-J. (2004). Factors affecting student burnout and academic achievement in multiple enrollment programs in Taiwan's technical-vocational colleges. *International journal of educational development*, 24(3), 283-301.

Zarei, S., & Mohammadi, S. (2022). Challenges of higher education related to e-learning in developing countries during COVID-19 spread: a review of the perspectives of students, instructors, policymakers, and ICT experts. *Environmental Science and Pollution Research*, 29(57), 85562-85568.

