Human Resource Digital Transformation of IT Sector in India

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Abstract

Information technology sector plays a vital role in the economy of the country. So the present study focused on the information technology sector of India to determine the effectiveness of human resource digital transformation. The administrative activities include personal record, updating details and benefits information, employee experience comprise cultural environment, technological environment and physical environment, and work-family balance encompass personal relationship, physical & mental health and overall happiness as independent variables. A total of 336 sample data collected from the employees of the information technology sector from Chennai. The goodness of model fit, composite reliability, discriminant validity between constructs, PLS path modelling utilized in full-fledged structural equation modelling by adopting SmartPLS to test the hypothesis. Employee experience has a positive influence; administrative tasks and work-family balance do not have a positive influence on human resource digital transformation. The results of the effectiveness of human resource digital transformation help the organization in decision-making and emphasize their action.
Keywords

Human Resource Digital Transformation, Administrative Tasks, Employee Experience, Work-family Balance, Information Technology Sector, India.

JEL Classification: O15, O31, M51, M54.

Introduction

Human resource digital transformation is essential in the information technology sector, especially in the perspective of the employees. Information technology companies are the pioneers in innovation and driving the technology to the greater heights. The information technology sector is rendering the digital technology service to other organizations and industries. The role of digital technology is increasing day-by-day because of the rapid increase in the business environment to take competitive advantage. For the very success of any organization, always human resource plays a vital role in the achievement of vision and mission through productivity and profitability. There is an influence of digital technology in areas like employee work-family life, work environment and administrative tasks of human resource management. This article aims to study the perspective of employees on the human resource digital transformation. The reason for choosing Chennai as a study area is because of the most significant number of organizations rendering information technology service in India.

In the early 1980s, the digital format of technologically stored information was less than 1%, and it reached 99% in 2014. 2005 was the start-up year of the real pace of ('Beginning of Digital Age') storing the digital information. It was estimated that the digital storage of data has increased from 2.6 exabytes to 5000 exabytes (5 Zettabytes) from the year 1986 to 2014. The internet usage nexus with the digital cloud storage will be 4.54 billion (59% of the world population in 2020) and mobile phone subscribers nexus with digital storage will be 4.78 billion (62% of the world population in 2020) (Clement, 2020). Business process outsourcing and information technology services are the major components of the information technology sector in India (Rajalakshmi Nirmal, 2017). In 2017 the information technology sector contribution to the Indian GDP of 7.7% with aggregate revenue of US$160 billion (Shelley Singh, 2017). In India, Chennai is the second-largest city in exporting both business process outsourcing and information technology. Asia's largest information technology park is in Chennai. The reason for the technological hub is because the majority of the software companies have their offices in Chennai (Parayil, 2016).
Human resource digital transformation has come across the levels; include digitization, digitalization, and digital transformation. Scanning is the process of material and symbolic dimensions by converting analogue signals to bits. Digitization executes information in different ways and types of materials in different systems. It used as memory storage, and data communicate digitized messages, includes punch cards or atoms, silicon transistors. Digitalization considered as a fourth industrial revolution which influences all the domains of human activity. Digitalization extends maximum contribution to the manufacturing process, communication patterns, transportation systems, and working styles (Parviainen, Tihinen, Kääriäinen, & Teppola, 2017). Digital transformation is the effective utilization of technological innovations to make new - or to change existing - business procedures, culture, and consumer expectation to face the changing market and business needs. Digital transformation has attracted the highest consideration in every business operations (Lamberton & Stephen, 2016).

In recent times the conception of digital transformation has gained his importance in the management research and practice (Nambisan S, Wright M, 2019). Digital transformation is a well-known business strategy to bring changes in business operations. Digital transformation will influence the whole organization in the business operation and may lead to development. Digital transformation inspires the different method of organizational processes, both internally and externally. Digital transformation reflects the impact of business on society in the implementation of different strategies with the combination of digital technologies. It is an integration of various digital technologies like social, cloud and mobile analytics, in transforming business operations. It encourages to explore, and social media search connects the consumers actively and more empowered (Verhoef et al., 2017).

In the earlier stages, the human resource considered as supporting the administrative function of employee services, but now the human resource is leading the organizations worldwide through the digital transformation. In recent times a human resource is facing a profound and rapid change in areas of the digital workforce, digital workplace and digital human resource. Digital workforce deals with the new management practices of the organizations, enhancing the culture of creativity and innovation, and facilitating talent practice in the organization (John Bersin, Tiffany Mcdowell, Amir Rahnema, 2017). Digital workplace uses modern and advanced tools of communication; design of a working environment facilitates organizational productivity and elevates the wellness and employee engagement. The digital human resource creates digital operation of human resource activities in leading the organizational change, using mobile applications and
digital tools to eradicate practical difficulties, and practising innovative advancements for continuous improvement (Michael Stephan, David Brown, 2017).

This article is to find the employee perspective on the human resource digital transformation and the present condition in the information technology sector in India. The study carried using the three significant hypotheses: (1) administrative tasks positively influence on human resource digital transformation, (2) employee experiences positively influence on human resource digital transformation, and (3) work-family balance positively influences on human resource digital transformation. The framework was developed using the previous studies, discussed using the various definitions, published data and researches of digital transformation to understand the employee perspective. The results presented and interpreted in detail, based on the study, the conclusion derived with a view for future research.

Figure 1 Research Model

Figure 1 represents the research model consists of 3 independent variables administrative tasks (personal records, updating details, and benefits information), employee experience (cultural environment, technological environment, and physical environment), and work-family balance (personal relationship, physical & mental health, and overall happiness) associated with the dependent variable (human resource digital transformation). The research framework was developed based on the various research outcomes from the unpublished and published data, high indexed reputed journals, practical experience, and
discussed using the different definitions. The research framework includes a direct relationship with independent variables and dependent variables.

**Literature Review and Hypothesis Development**

The various literature related to human resource digital transformation helps in the understanding of present information in multiple disciplines instead of a specific field (Tarafdar & Davison, 2018). It is inevitable to consolidate the knowledge from various management aspects in making wise organizational decisions using digital technology for better regulatory changes. Human resource digital transformation has come across various levels like; digitization used in the documentation of internal and external activities of the organization, it was not dealt with the activities of creating values. Digital technologies used in the digitalization of existing business operation for the optimum cost-saving (Pagani & Pardo, 2017). Digital technologies utilized in the human resource digital transformation for the development of core competencies and to overcome the obstacles (Singh & Hess, 2017).

Human resource process through the human resource digital transformation in the administrative tasks is efficient and has prominent involvement in the organizational strategy (Silva & Lima, 2018). Human resource management practices and the regulatory process supported with the information technology in the human resource digital transformation. It is difficult for some of the organization in handling the tasks and change process of human resource digital transformation. Human resource digital transformation has the control of the information system in support of the management task got high importance (Hausberg, Liere-Netheler, Packmohr, Pakura, & Vogelsang, 2019). Human resource managers should avoid outdated action and think in the human resource digital transformation for the development of human capital.

Human resource digital transformation accelerates the opportunities, ways of helping employees to ease the tasks and develop the abilities and skills (Betchoo, 2016). Developmental aspects of human resource with employee career, succession, tuition assistance are the combination of administrative procedure to human resource digital transformation of the organizational. Human resource management is people-oriented, the same approach of reducing the burden of administrative activities used in the human resource digital transformation in designing ambitious jobs. Human resource digital transformation deals with the strategies focus on the implementation of policies and procedures using the technological support to reduce the administrative activities of employees in the organization (Fenech, Baguant, & Ivanov, 2019).
**H1: Administrative tasks positively influence on human resource digital transformation of information technology employees in India.**

Human resource digital transformation is not only helping the employees in doing the work better but also enhance the quality of work, and ways of executing in the organization. To enhance the work environment and improvise the work experience of the employees in the organization; human resource digital transformation includes the supporting technologies like teleconferencing, robots, vesture computing devices and computerized monitoring system (Cascio & Montealegre, 2016). Infrastructure is becoming digital technology at a fast pace; small alterations in the work environment will create better work experience to the employees and also to the work system. Human resource digital transformation apply technology to support human in handling physical resources and information to ensure better employee experience.

The combination of human resource and information technology is the new dimension in the world; the hyper connection is creating the technological environment in the organization through the internet. The changes in the organization towards the human resource digital transformation will make cultures influence and multidimensional support in the workplace (Larkin, 2017). Human resource digital transformation is an essential strategic tool in creating a technological environment in collecting the data, managing the information, and in decision making. Technological development adopted in an organization has changed the role of human resource management in empowering and making the physical environment to create their work value. In the current scenario, there are lots of challenges in human resource management in reducing the generation split. Human resource digital transformation will create the physical environment to overcome these obstacles in the organization (Ghoshal S, 2015).

**H2: Employee experience positively influence on human resource digital transformation of information technology employees in India.**

Work-family balance is the most significant aspect of human resource management has attracted the administration to maintain the personal relationship among the employees and families (Albalushi & Sankar, 2019). Work-family balance is the balance of office timing and family responsibilities. Human resource digital transformation reduced the conflict between office time and family responsibilities and increased overall happiness. The workplace factors have a direct effect on the work-family balance; the work role supported with the human resource digital transformation, workload and work environment (Sankar, 2019). Work-family balance practices designed with the human
resource digital transformation will help the non-work demands, these time of initiatives will enhance both the physical and mental health (Vineetha Prakash, 2018).

Human resource digital transformation ensures the quality of work-family balance involves the office timing like rotation work schedule, flexible work schedule and fixed work schedule will enhance the overall happiness (Sankar, 2018). Every organization need to implement the work-family balance to ensure the personal relationship using the digital transformation of human resource. The work-family balance will assist the work needs for the physical health and non-work needs of the employees for the mental health using the information system in human resource management (Alaradi & Sankar, 2019). In establishing standards for work-family balance and ensure the overall happiness, organizations utilize human resource digital transformation to have a proper association with the organization (Scott, C. R., & Lewis, 2017). The role of human resource managers in shaping the appropriate communication process and personal relationship, the need to adjust the vision of the organization for the work-family balance using the well unionized digital platform.

\( H_3: \) Work-family balance positively influences on human resource digital transformation of information technology employees in India.

**Methodology**

The sample respondents of the study are the employees of several information technology organizations from Chennai includes middle-level managers, staff members and clerical employees. All the employees selected as sample respondents are only from the study area. The sample frame should reflect the overall behaviour of the total population of the study (Cooper, D. R., Schindler, P. S., & Sun, 2006). The data collected through the online survey and face-to-face interview method to understand employee perspective on human resource digital transformation. SPSS was used to analyze the missing data by MCAR test. The results indicated \( (x^2=45.827, df=97, \text{sig.}=1.000) \) that the null hypothesis rejected and finalized the data were missing randomly. In calculating the sample size for Structural Equation Modelling (SEM) A-prior sample size calculator used (Soper, 2020). The information required consists of 0.5 anticipated effect sizes (Cohen's d), desired statistical power level 95%, probability level 0.05. The finished sample size needed to be 88, 106 minimum and 176, 212 maximum, respectively for all effect sizes. The sample size of the study 336 met the requirements and satisfied enough to reflect the total population. Synergetic PLS, ADANCO 1.1 software was used in the first level of analysis for the test of discriminant validity and to check the validity and reliability of the instrument, SPSS software used for the composite reliability. In the next level, the study
utilized SmartPLS 3.3.2 to analyze the measurement model and structural model to prove the hypothesis, positive influence of construct.

Results

The assessment of goodness to model fit analyzed before testing the measurement and the structural model. It is mandatory to report the model fit using inference statistics or use of fit indices.

Table 1 Goodness of Model Fit

<table>
<thead>
<tr>
<th>Fit criteria</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRMR</td>
<td>0.096</td>
</tr>
<tr>
<td>$d_{ULS}$</td>
<td>0.511</td>
</tr>
<tr>
<td>$d_G$</td>
<td>1.488</td>
</tr>
</tbody>
</table>

Data shown in table-1 reveals that the appropriate measure of model fit using standardized root mean square residual (SRMR) ADANCO software (Dijkstra & Henseler, 2015). Other model fit criteria using bootstrap to determine geodesic discrepancy ($d_G$) and unweighted least squares discrepancy ($d_{ULS}$) (Hair, Hollingsworth, Randolph, & Chong, 2017). SRMR value less than 0.1 is a conservative view; the calculated result of 0.096 is a good fit for SRMR. $d_G$ and $d_{ULS} < 95$ per cent of bootstrap quantile considered as a conventional view; the computed result of 0.511 and 1.488 reflects the criteria met; therefore, the model has a good fit.

Table 2 Composite Reliability

<table>
<thead>
<tr>
<th></th>
<th>Alpha</th>
<th>CR</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative Tasks</td>
<td>0.740</td>
<td>0.771</td>
<td>0.550</td>
</tr>
<tr>
<td>Employee Experience</td>
<td>0.802</td>
<td>0.883</td>
<td>0.716</td>
</tr>
<tr>
<td>Work-family Balance</td>
<td>0.751</td>
<td>0.856</td>
<td>0.667</td>
</tr>
<tr>
<td>Human Resource Digital Transformation</td>
<td>0.786</td>
<td>0.855</td>
<td>0.545</td>
</tr>
</tbody>
</table>

In the measurement evaluation, the study deems composite reliability, average variance extracted (AVE=convergent validity), outer loadings, Cronbachs $\alpha$ and discriminant validity. The information provided in table - 2 stand for the statistical values of the composite reliability more significant than the cutoff point that complies with the necessary conditions to get accepted. The overall value of the reliability statistics using Cronbach's alpha was 0.865 (analyzed using SPSS). As revealed in the given table, all the calculated values of the composite reliability (more than 0.7) are acceptable (Henseler, Hubona, & Ray, 2016). The average variance extracted AVE values were above the minimum required level of 0.50.
Table 3 Discriminant Validity

<table>
<thead>
<tr>
<th></th>
<th>AT</th>
<th>EE</th>
<th>HRDT</th>
<th>WFB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative Tasks</td>
<td>0.742</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee Experience</td>
<td>0.117</td>
<td>0.846</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human Resource Digital Transformation</td>
<td>0.126</td>
<td>0.884</td>
<td>0.738</td>
<td></td>
</tr>
<tr>
<td>Work-family Balance</td>
<td>0.139</td>
<td>0.822</td>
<td>0.812</td>
<td>0.817</td>
</tr>
</tbody>
</table>

It observed from the table - 3 signify the discriminant validity using the PLS approach. Fornell-Larcker criterion used commonly to evaluate the degree of shared variance between latent variables of the model. Also, to examine the discriminant validity using the PLS approach, the values of Monotrait-Heteromethod correlations less than 0.9 will be acceptable (Dijkstra & Henseler, 2015). The calculated values are less than the monotrait-heteromethod correlations discriminant validity, so the discriminant validity was accepted. The results proved that the measurement scales are reliable and valid.

Structural Equation Modeling (SEM)

Figure 2 PLS Result
Figure 2 represents that the $R^2$ value for the estimated equation is 0.969, which is significant at 1 per cent level of probability. It shows that 0.969 (96.9) per cent of the variation in human resource digital transformation described by administrative tasks, employee experience and work-family balance.

<table>
<thead>
<tr>
<th>Table 4 Structural Hypothesis</th>
<th>Beta</th>
<th>SE</th>
<th>P-Values</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefit Information ← Administrative Tasks</td>
<td>0.903</td>
<td>0.327</td>
<td>0.035</td>
<td>1.429</td>
</tr>
<tr>
<td>Personal Records ← Administrative Tasks</td>
<td>0.411</td>
<td>0.480</td>
<td>0.732</td>
<td>1.434</td>
</tr>
<tr>
<td>Updating Details ← Administrative Tasks</td>
<td>0.816</td>
<td>0.295</td>
<td>0.066</td>
<td>1.608</td>
</tr>
<tr>
<td>Cultural Environment ← Employee Experience</td>
<td>0.813</td>
<td>0.010</td>
<td>0.000</td>
<td>1.693</td>
</tr>
<tr>
<td>Physical Environment ← Employee Experience</td>
<td>0.835</td>
<td>0.011</td>
<td>0.000</td>
<td>1.641</td>
</tr>
<tr>
<td>Technological Environment ← Employee Experience</td>
<td>0.889</td>
<td>0.012</td>
<td>0.000</td>
<td>2.020</td>
</tr>
<tr>
<td>Personal Relationship ← Work-family Balance</td>
<td>0.856</td>
<td>0.015</td>
<td>0.000</td>
<td>1.660</td>
</tr>
<tr>
<td>Personal, Mental Health ← Work-family Balance</td>
<td>0.888</td>
<td>0.010</td>
<td>0.000</td>
<td>1.934</td>
</tr>
<tr>
<td>Overall Happiness ← Work-family Balance</td>
<td>0.693</td>
<td>0.014</td>
<td>0.000</td>
<td>1.353</td>
</tr>
</tbody>
</table>

It observed from the table - 4 elucidate that the detailed results of structural relationship using the PLS Algorithm. Multicollinearity calculated by variance inflation factors (VIF) and tolerance. If the values of VIF exceeds 4.0 or less than 0.2 reflects the problems with multicollinearity (Hair Jr, Black, Babin, & Anderson, 2010). The Collinearity Statistics (outer VIF values) of benefits information 1.429, personal records 1.434, updating details 1.608, cultural environment 1.693, physical environment 1.641, technological environment 2.020, personal relationship 1.660, personal & mental health 1.934 and overall happiness 1.353 were less than four represents that there is no multicollinearity effect among the variables.

<table>
<thead>
<tr>
<th>Table 5 Hypothesis Testing</th>
<th>Beta</th>
<th>t-Statistics</th>
<th>P-Values</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative Tasks → HRDT</td>
<td>-0.011</td>
<td>0.841</td>
<td>0.401</td>
<td>Not Supported</td>
</tr>
<tr>
<td>Employee Experience → HRDT</td>
<td>0.957</td>
<td>32.504</td>
<td>0.000</td>
<td>Supported</td>
</tr>
<tr>
<td>Work-family Balance → HRDT</td>
<td>0.028</td>
<td>0.870</td>
<td>0.385</td>
<td>Not Supported</td>
</tr>
</tbody>
</table>

The shreds of evidence revealed in the table - 5 signify the detailed results of bootstrapping for the testing of the hypothesis. In testing the hypothesis, the analytical bootstrapping technique describes the level of significance of the path between the variables, 5000 re-sampling bootstrapping procedure utilized while calculating SmartPLS. The results indicate that the administrative tasks did not have a positive influence on human resource digital transformation ($\beta=-0.011$, t-value=0.841, p>0.05); therefore, H1 rejected. The findings revealed that employee experience has a positive influence on human resource digital transformation ($\beta=0.957$, t-value=32.504, p<0.05); therefore, H2
accepted. Finally, the findings indicated that the work-family balance did not have a positive influence on human resource digital transformation ($\beta=0.028$, $t$-value=0.870, $p>0.05$); therefore, $H_3$ rejected. Organizations using technology to make human resource practices fast and convenient. The human resource digital transformation reduces the time spent for analysis of employee data (Fenech et al., 2019).

The findings show that the hypothesis $H_2$ ($t$-value 32.504) employee experience positively influence human resource digital transformation supported by the 1% (2.58) level of significance. To enhance the work environment and improvise the work experience of the employees in the organization; human resource digital transformation includes the supporting technologies like teleconferencing, robots, vesture computing devices and computerized monitoring system (Cascio & Montealegre, 2016). $H_1$ ($t$-value 0.841) not recommended, administrative tasks not positively influence human resource digital transformation. Human resource department of several organizations is struggling to change or transform from the traditional responsibility in handling the administrative tasks (McGrath, 2019). $H_3$ ($t$-value 0.870) not supported, work-family balance not positively influences human resource digital transformation because the calculated $t$-value did not meet the level of significance. The work-family balance differs every generation; human resource digital transformation may not support the work-family because there is no clear separation between personal life and professional life (Simer, 2019).

**Conclusion**

The findings of this study revealed that employee experience positively influences human resource digital transformation. There is no positive influence of administrative tasks and work-family balance on human resource digital transformation, but there is a relationship between administrative tasks, work-family balance and human resource digital transformation. This study supports the findings of the previous researches of the role of digital transformation in human resource management. Also, the study aligned the framework of some areas not discussed earlier like administrative tasks, employee experience and work-family balance on human resource digital transformation.

The respondents of the survey feel that employee experience like physical, technological and cultural environment will enhance the human resource transformation. The authorities need to understand the difficulties of administrative tasks like personal records, updating details, benefits information and improvements required for the work-family balance like personal relationship, physical & mental health, and overall happiness by enhancing the factors related to the digital transformation. The study will help in building a good relationship between the employees, and authorities concerned with the activities will
make them contribute better human resource digital transformation. Overall, the Information technology sector plays a dominant role in the development of the Indian economy. So, the information technology sector must improvise the difficulties faced in the human resource digital transformation to enhance the quality of the employees for prosperity.

**Future Research**

In future, the relevant studies may conduct with this framework by adding any moderation or mediation effects. Also, some variables may be included, or some existing variable can be excluded from the research framework. It will be more appropriate if the same study will be conducted with any another sector or other set of respondents with high sample size to check the variation in the results. Even the study may be undertaken in the cross-cultural respondents to find out the differences in the result, and the research can be conducted with the changes in qualitative and quantitative techniques.

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